Fort Monmouth HAER No. NJ-41
(Fort Monmouth, Evans Area), (Fort Monmouth, Charles Wood Area)
Asbury Park
[redacted] Monmouth County
New Jersey

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

Fort Monmouth

NJ-41

Location:	In Monmouth County, New Jersey, between the boroughs of Little Silver and Eatontown.
Date of Construction:	Established in 1917.
Owner:	Department of the Army
Significance:	Established in 1917 as a World War I cantonment, Fort Monmouth aquired its first permanent buildings between 1927 and 1937 as part of America's first major peacetime military construction program. Additional features of significance relate to WWI aviation and later Signal Corps activities and developments.
Historical Report Prepared by:	David G. Buchanan and John P. Johnson, 1984.
Prepared for Transmittal by:	Robie S. Lange, HABS/HAER, 1985.

EXECUTIVE SUMMARY

Fort Monmouth, New Jersey, is the historic home of the U.S. Army Signal Corps. Established in 1917 as a World War I cantonment, it acquired its first permanent buildings between 1927 and 1937 as part of America's first major peacetime military construction program. Currently, Fort Monmouth is the headquarters of the Army's Communications and Electronics Command (CECOM) and, with its subinstallations, provides CECOM's research and development support. Fort Monmouth consists of 418 buildings, the majority of which were built after World War II. Two subinstallations, the Charles Wood and Evans Areas, are both located nearby.

There are no Category I and II historic properties at Fort Monmouth or the Charles Wood or Evans Areas, but a National Register district nomination has been prepared for the buildings that were constructed as part of the 1926-1939 permanent construction program at Fort Monmouth. These buildings are Category III historic properties and consist of administration, laboratory, and training buildings, and base housing. The formal arrangement and design of these structures largely determined Fort Monmouth's overall architectural character and continue to influence its physical development.

Other Category III historic properties at Fort Monmouth and its subinstallations include the Radar Antenna Shelters, which appear to have been designed specifically for the Signal Corps to house the SCR-268 radar set; a World War I airplane hangar, the only World War I structure that still exists at Fort Monmouth; Gibbs Hall, the officers' club at the Charles Wood Area; and

three buildings at the Evans Area constructed by the Marconi-American Company as a part of the company's receiver station for commercial trans-atlantic radio operations.

CONTENTS

PREFACE

This report presents the results of an historic properties survey of Fort Monmouth, New Jersey, and subinstallations Charles Wood Area and Evans Area. Prepared for the United States Army Materiel Development and Readiness Command (DARCOM), the report is intended to assist the Army in bringing these installations into compliance with the National Historic Preservation Act of 1966 and its amendments, and related federal laws and regulations. To this end, the report focuses on the identification, evaluation, documentation, nomination, and preservation of historic properties at the three installations. Chapter 1 sets forth the survey's scope and methodology; Chapter 2 presents an architectural, historical, and technological overview of the installations and their properties; and Chapter 3 identifies significant properties by Army category and sets forth preservation recommendations. Illustrations and an annotated bibliography supplement the text.

This report is part of a program initiated through a memorandum of agreement between the National Park Service, Department of the Interior, and the U.S. Department of the Army. The program covers 74 DARCOM installations and has two components: 1) a survey of historic properties (districts, buildings, structures, and objects), and 2) the development of archeological overviews. Stanley H. Fried, Chief, Real Estate Branch of Headquarters DARCOM, directed the program for the Army, and Dr. Robert J. Kapsch, Chief of the Historic American Buildings Survey/Historic American Engineering Record

(HABS/HAER) directed the program for the National Park Service. Sally Kress Tompkins was program manager, and Robie S. Lange was project manager for the historic properties survey. Technical assistance was provided by Donald C. Jackson.

Building Technology Incorporated acted as primary contractor to HABS/HAER for the historic properties survey. William A. Brenner was BTI's principal-in-charge and Dr. Larry D. Lankton was the chief technical consultant. Major subcontractors were the MacDonald and Mack Partnership and Melvyn Green and Associates. The authors of this report were David G. Buchanan and John P. Johnson.

The complete HABS/HAER documentation for these installations will be included in the HABS/HAER collections at the Library of Congress, Prints and Photographs Division, under the designation HAER No. NJ-41.

Chapter 1

INTRODUCTION

SCOPE

This report is based on an historic properties survey conducted in 1982 of all Army-owned properties located within the official boundaries of Fort Monmouth, New Jersey, and subinstallations Charles Wood Area and Evans Area. The survey included the following tasks:

- Completion of documentary research on the history of the installations and their properties, and general research on the history of the Army Signal Corps.

- Completion of a field inventory of all properties at the installations.

- Preparation of an architectural, historical, and technological overview for the installations.

- Evaluation of historic properties and development of recommendations for preservation of these properties.

Also completed as a part of the historic properties survey of the installations, but not included in this report, are:

- HABS/HAER Inventory cards for 77 individual properties. These cards, which constitute HABS/HAER Documentation Level IV, will be provided to the Department of the Army. Archival copies of the cards, with

their accompanying photographic negatives, will be transmitted to the HABS/HAER collections at the Library of Congress.

- A National Register district nomination for the Fort Monmouth housing and administrative area.

The methodology used to complete these tasks is described in the following section of this report.

METHODOLOGY

1. Documentary Research

Fort Monmouth and subinstallations Charles Wood Area and Evans Area are involved in the development of communications and electronics equipment for the Army, and their history is intimately tied to the history of the Army Signal Corps. Documentary research therefore centered on the physical development of these three facilities and the parallel development of the Signal Corps. The New Jersey State Historic Preservation Office was contacted about possible historic properties at Fort Monmouth, Charles Wood Area, and Evans Area. The only property identified by this source was the Marconi Hotel at Evans Area, which is listed on the New Jersey Register of Historic Places (see Chapter 3). Information on pre-military land use was found at the Monmouth County Public Library, and information on Signal Corps activities at Fort Monmouth was found at the Military History Institute at Carlisle Barracks,

Pennsylvania, and in Washington, D.C., at the Library of Congress, the Library of the Corps of Engineers, and the Center for Military History.

Army records used for the field inventory included current Real Property Inventory (RPI) printouts that listed all officially recorded buildings and structures by facility classification and date of construction; the installation's property record cards; base maps and photographs supplied by installation personnel; and installation master planning, archeological, and environmental assessment and related reports and documents. A complete listing of documentary material may be found in the bibliography.

2. Field Inventory

The field inventory was conducted by John P. Johnson and David G. Buchanan during a two-week period in November, 1982. Assistance was provided by Mr. William B. Strong, Jr., Command Historian, CECOM; Dr. Richard B. Bingham, Historian, CECOM; Dr. Kenneth J. Clifford, Archivist-Historian, CECOM; Robert T. Cannon, Director, CECOM Museum; and George Fitzmaier, Office of Facilities Engineer at Fort Monmouth.

Field inventory procedures were based on the HABS/HAER Guidelines for Inventories of Historic Buildings and Engineering and Industrial Structures.[1] All areas and properties were visually surveyed. Building locations and approximate dates of construction were noted from the installation's property records and field-verified.

Field inventory forms were prepared for, and black and white 35 mm photographs taken of all buildings and structures through 1945 except basic utilitarian structures of no architectural, historical, or technological interest. When groups of similar ("prototypical") buildings were found, one field form was normally prepared to represent all buildings of that type. Field inventory forms were also completed for representative post-1945 buildings and structures.[2] Information collected on the field forms was later evaluated, condensed, and transferred to HABS/HAER Inventory cards.

3. Historic Overview

A combined architectural, historical, and technological overview was prepared from information developed from the documentary research and the field inventory. It was written in two parts: 1) an introductory description of the installation, and 2) a history of the installation by periods of development, beginning with pre-military land uses. Maps and photographs were selected to supplement the text when appropriate.

The objectives of the overview were to 1) establish the periods of major construction at the installation, 2) identify important events and individuals associated with specific historic properties, 3) describe patterns and locations of historic property types, and 4) analyze specific building and industrial technologies employed at the installation.

4. Property Evaluation and Preservation Measures

Based on information developed in the historical overviews, properties were first evaluated for historical significance in accordance with the elegibility criteria for nomination to the National Register of Historic Places. These criteria require that eligible properties possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that they meet one or more of the following:[3]

A. Are associated with events that have made a significant contribution to the broad patterns of our history.

B. Are associated with the lives of persons significant in the nation's past.

C. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.

D. Have yielded, or may be likely to yield, information important in pre-history or history.

Properties thus evaluated were further assessed for placement in one of five Army historic property categories as described in Army Regulation 420-40:[4]

Category I	Properties of major importance
Category II	Properties of importance
Category III	Properties of minor importance
Category IV	Properties of little or no importance
Category V	Properties detrimental to the significance of of adjacent historic properties

Based on an extensive review of the architectural, historical, and technological resources identified on DARCOM installations nationwide, four criteria were developed to help determine the appropriate categorization level for each Army property. These criteria were used to assess the importance not only of properties of traditional historical interest, but of the vast number of standardized or prototypical buildings, structures, and production processes that were built and put into service during World War II, as well as of properties associated with many post-war technological achievements. The four criteria were often used in combination and are as follows:

1) Degree of importance as a work of architectural, engineering, or industrial design. This criterion took into account the qualitative factors by which design is normally judged: artistic merit, workmanship, appropriate use of materials, and functionality.

2) Degree of rarity as a remaining example of a once widely used architectural, engineering, or industrial design or process. This criterion was applied primarily to the many standardized or prototypical DARCOM buildings, structures, or industrial processes. The

more widespread or influential the design or process, the greater the importance of the remaining examples of the design or process was considered to be. This criterion was also used for non-military structures such as farmhouses and other once prevalent building types.

3) Degree of integrity or completeness. This criterion compared the current condition, appearance, and function of a building, structure, architectural assemblage, or industrial process to its original or most historically important condition, appearance, and function. Those properties that were highly intact were generally considered of greater importance than those that were not.

4) Degree of association with an important person, program, or event. This criterion was used to examine the relationship of a property to a famous personage, wartime project, or similar factor that lent the property special importance.

The majority of DARCOM properties were built just prior to or during World War II, and special attention was given to their evaluation. Those that still remain do not often possess individual importance, but collectively they represent the remnants of a vast construction undertaking whose architectural, historical, and technological importance needed to be assessed before their numbers diminished further. This assessment centered on an extensive review of the military construction of the 1940-1945 period, and its contribution to the history of World War II and the post-war Army landscape.

Because technology has advanced so rapidly since the war, post-World War II properties were also given attention. These properties were evaluated in terms of the nation's more recent accomplishments in weaponry, rocketry, electronics, and related technological and scientific endeavors. Thus the traditional definition of "historic" as a property 50 or more years old was not germane in the assessment of either World War II or post-war DARCOM buildings and structures; rather, the historic importance of all properties was evaluated as completely as possible regardless of age.

Property designations by category are expected to be useful for approximately ten years, after which all categorizations should be reviewed and updated.

Following this categorization procedure, Category I, II, and III historic properties were analyzed in terms of:

- Current structural condition and state of repair. This information was taken from the field inventory forms and photogaphs, and was often supplemented by rechecking with facilities engineering personnel.

- The nature of possible future adverse impacts to the property. This information was gathered from the installation's master planning documents and rechecked with facilities engineering personnel.

Based on the above considerations, the general preservation recommendations presented in Chapter 3 for Category I, II, and III historic properties were developed. Special preservation recommendations were created for individual properties as circumstances required.

5. Report Review

Prior to being completed in final form, this report was subjected to an in-house review by Building Technology Incorporated. It was then sent in draft to the subject installation for comment and clearance and, with its associated historical materials, to HABS/HAER staff for technical review. When the installation cleared the report, additional draft copies were sent to DARCOM, the appropriate State Historic Preservation Officer, and, when requested, to the archeological contractor performing parallel work at the installation. The report was revised based on all comments collected, then published in final form.

NOTES

1. Historic American Buildings Survey/Historic American Engineering Record, National Park Service, Guidelines for Inventories of Historic Buildings and Engineering and Industrial Structures (unpublished draft, 1982).

2. Representative post-World War II buildings and structures were defined as properties that were: (a) "representative" by virtue of construction type, architectural type, function, or a combination of these, (b) of obvious Category I, II, or III historic importance, or (c) prominent on the installation by virtue of size, location, or other distinctive feature.

3.. National Park Service, How to Complete National Register Forms (Washington, D.C.: U.S. Government Printing Office January 1977).

4. Army Regulation 420-40, Historic Preservation (Headquarters, U.S. Army: Washington, D.C., 15 April 1984).

Chapter 2

HISTORIC OVERVIEW

BACKGROUND

Fort Monmouth is the historic home of the Army Signal Corps. Established in 1917 as Camp Alfred Vail, a temporary Signal Corps camp, it became a permanent installation in 1925 and was renamed Fort Monmouth. Signal Corps training activities were consolidated at Fort Monmouth following World War I, and during World War II, these training activities were expanded and Fort Monmouth served as the Eastern Signal Corps Training Center. The first radio laboratories were established at Fort Monmouth during World War I to develop ground-to-air radio communications for the Army Air Service. Since then, the Signal Corps Laboratories have been responsible for many scientific developments including a radio-equipped weather balloon (1928), the first walkie-talkie (1936), and the first American aircraft detection radar (1938). Signal Corps scientists also successfully reflected the first radar signals off the moon (1946). More recent scientific achievements at Fort Monmouth include:

- First weather radar (1948)
- First synthetic quartz (1948)
- First solar electrical power supply to be used in space (1958)
- First high-capacity communications satellite (1960)
- First multichannel laser relay (1965)
- First passive night vision devices (1968)
- First hand-held passive thermal viewer (1971)

During a major reorganization of the Army in 1962, the Signal Corps assumed responsibility for the electronics research and development and the command title was changed to ECOM (Electronics Command). Today the command is known as CECOM (Communications and Electronics Command), a major subordinate command of DARCOM. CECOM's current mission is to develop communications and electronics equipment and systems for the Army.

Fort Monmouth is located in Monmouth County, New Jersey, between the boroughs of Little Silver and Eatontown. The installation consists of 418 buildings situated on 637 acres. Major building types include administration and training facilities, research and development laboratories, troop housing, and officers' family housing. Permanent-type buildings were constructed at the installation between 1927-1937, during World War II, and following the Korean War. (Figures 1 and 2)

The Charles Wood Area and the Evans Area, two subinstallations developed during World War II, are located within several miles of the main post at Fort Monmouth. The land occupied by the Charles Wood Area was developed in the 1920s as a country club and was acquired by the Signal Corps in 1941. The majority of structures at Charles Wood, about 243 buildings situated on 512 acres, date from the 1950s. Although the installation consists mostly of housing, it is also the site of CECOM's primary research and development engineering laboratory. The Evans Area, developed by the American-Marconi Company in 1914, was acquired by the Signal Corps in 1941. The majority of buildings in this area date from the early 1940s. Research laboratories and radar shelters are the most prominent building types. (Figures 3 and 4)

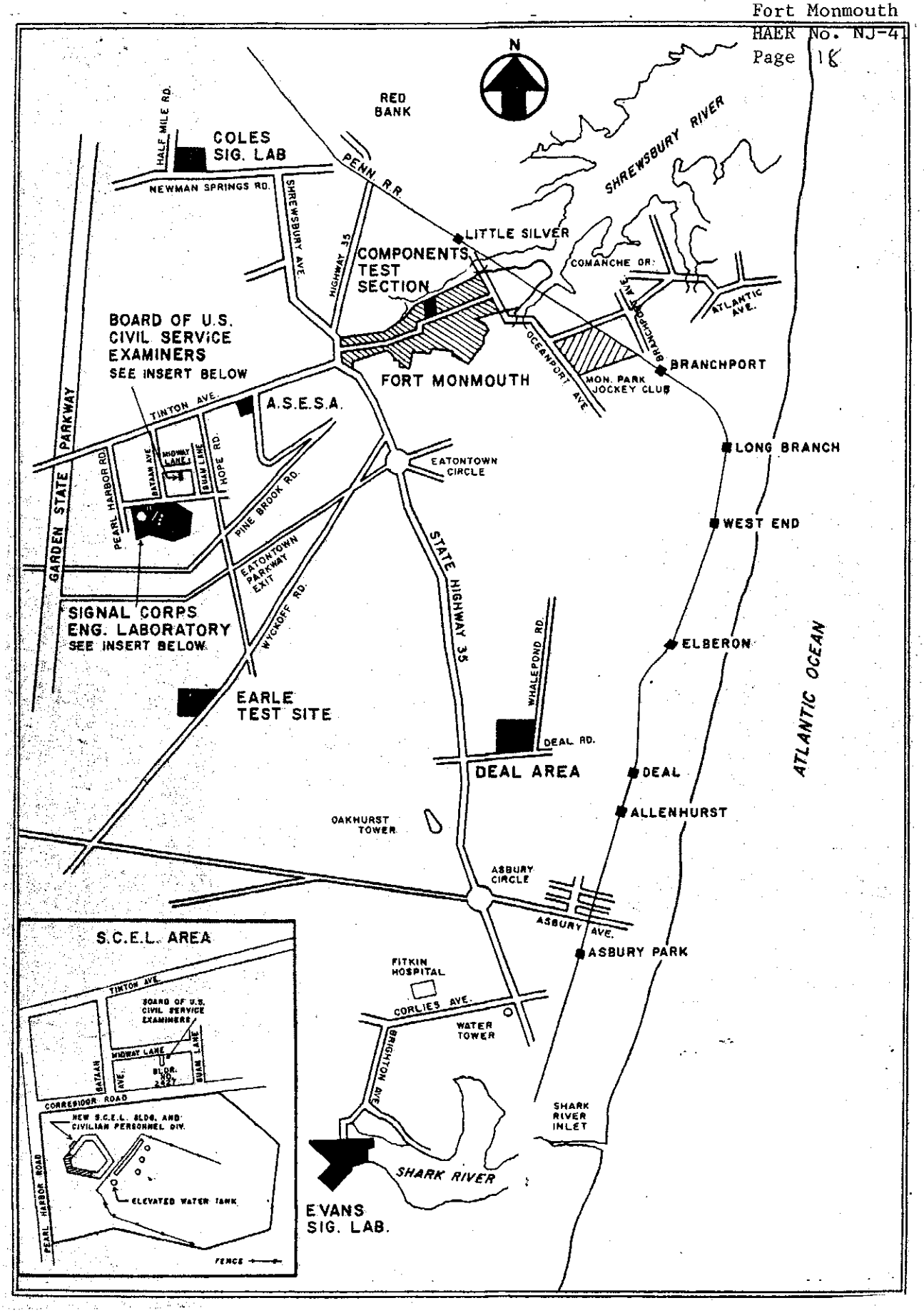

Figure 1: Area Map of New Jersey. (Source: Fort Monmouth Historian's Office)

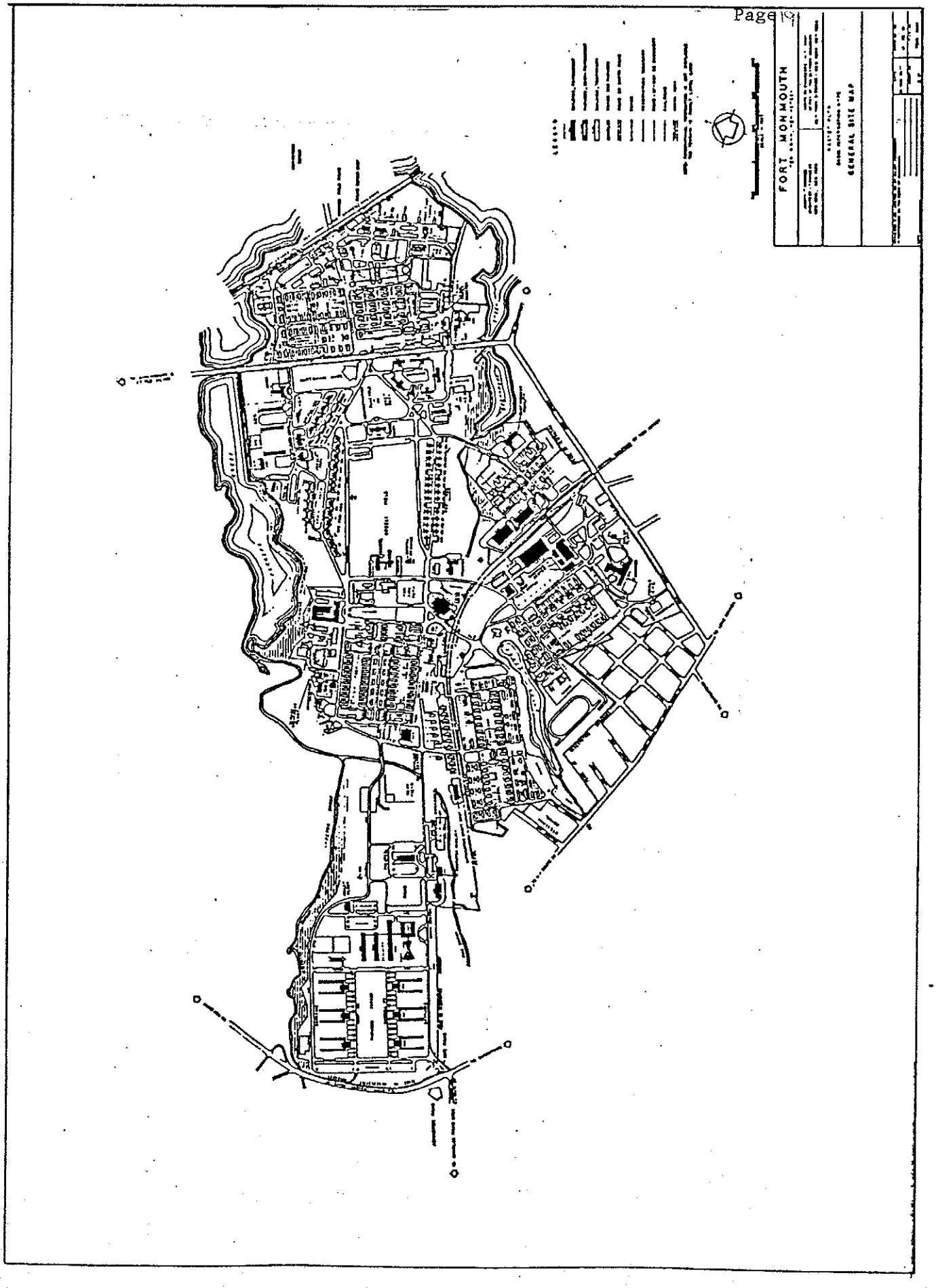

Figure 2: Fort Monmouth General Site Map, 1982. (Source: Fort Monmouth Facility Engineers' Office)

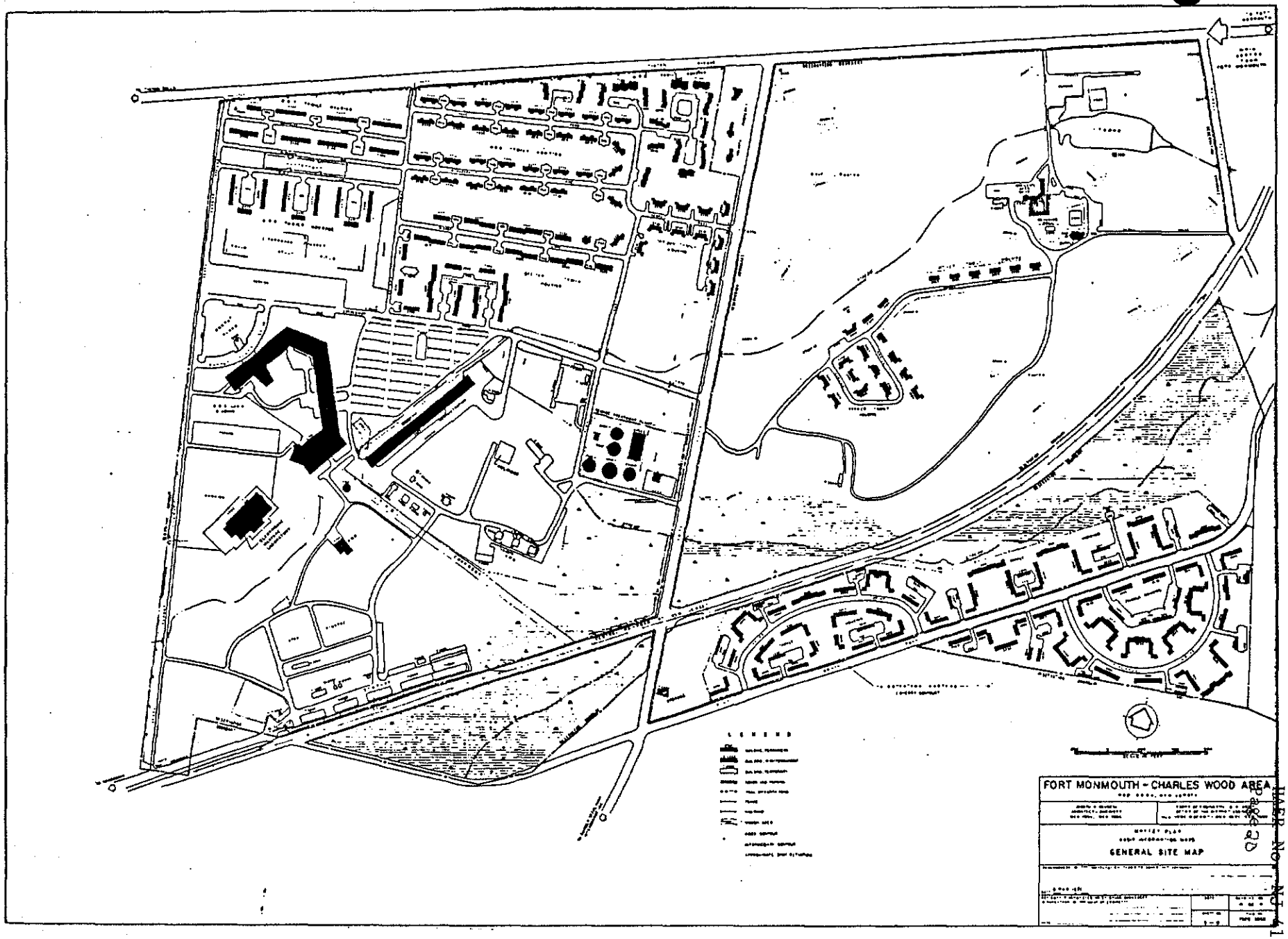

Figure 3: Fort Monmouth-Charles Wood Area General Site Map, 1982. (Source: Fort Monmouth Facility Engineers' Office)

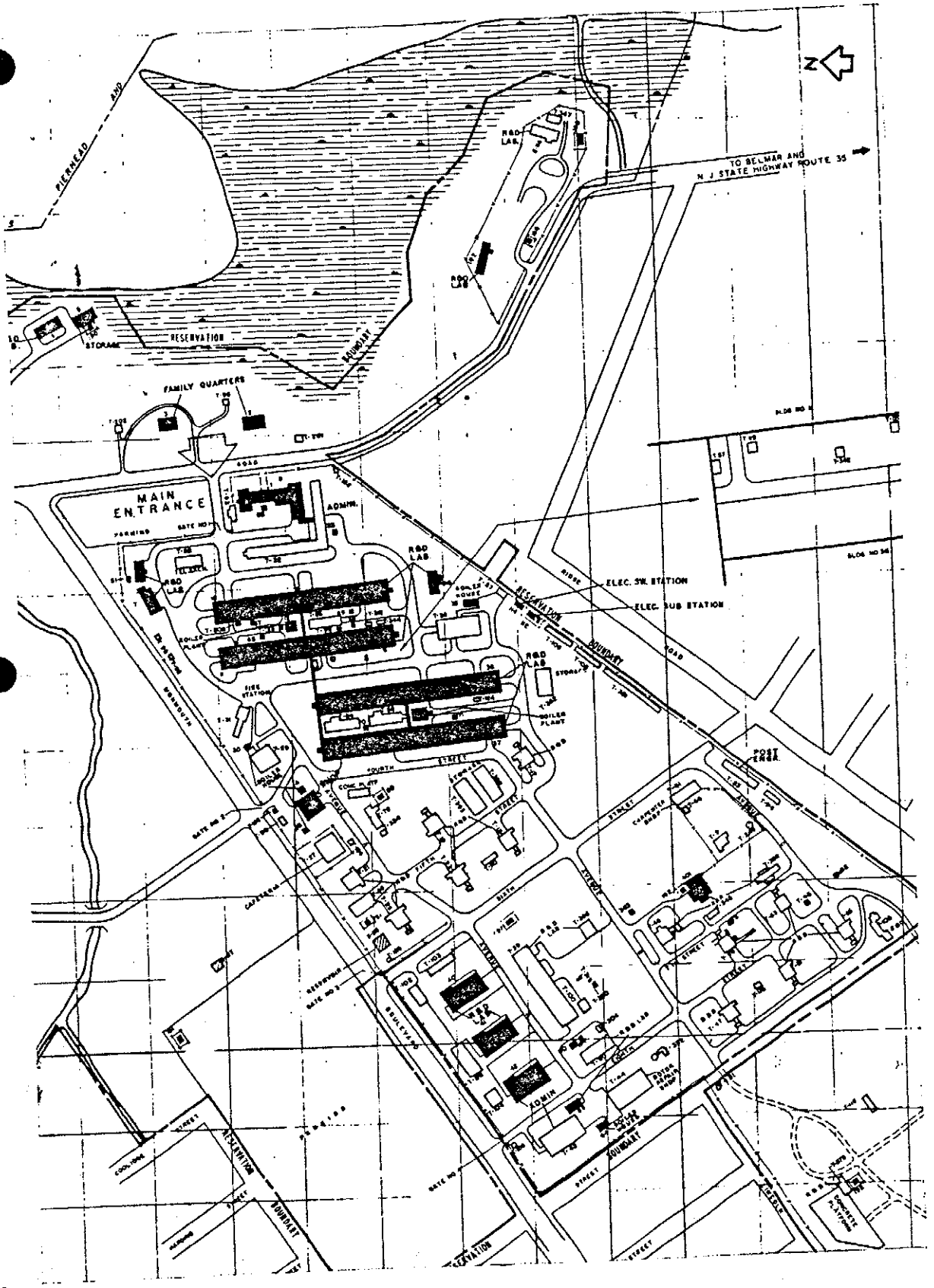

Figure 4: Fort Monmouth-Evans Area General Site Map, 1982. Showing the built-up area only. (Source: Fort Monmouth Facility Engineers' Office)

MONMOUTH PARK RACETRACK, 1917

In May 1917 the Adjutant General of the Army authorized establishment of four training and mobilization camps for the U.S. Army Signal Corps. The first and principal camp was located on the grounds of the Monmouth Park Racetrack near Long Branch, New Jersey. Initially, the Signal Corps leased approximately 468 acres, with an option to purchase, but it was not until 1925 that the Army actually acquired the land.[1]

The Monmouth Park Racetrack was conceived by J. McB. Davison and J. F. Chamberlain. In 1869, they purchased 128 acres of the Corlies Estate that included a residence, a barn, and a wagon house. Davison and Chamberlain fenced the grounds and laid out an oval, 1-mile racetrack. The track opened on July 30, 1870, and soon became a favorite horseracing and gambling spot for wealthy New Yorkers anxious to escape the summer heat of the city. Excursion steamers and trains provided easy access to the racetrack, and it became a popular attraction on this section of the Atlantic coast, already famous as "America's Playground."[2]

Monmouth Park was expanded in 1890 to include a new racetrack on the site of the earlier track, a hotel, large stables, and a sizeable grandstand. The track prospered until 1893, when the New Jersey State Legislature outlawed gambling. This led to the dissolution of the Monmouth Park Association and, eventually, to the sale of the land. By the time the Signal Corps obtained the land, ownership had changed several times and the Monmouth Park Racetrack was overgrown and in a state of decay.[3]

Monmouth Park was an ideal location for a military installation. Situated 45 miles south of New York City, it was serviced by two railroads, steamship lines, and good highways. The site also had the strategic advantage of being close to the largest commercial communication organizations in the world; thus, the latest devices could be observed in operation and the best material and trained personnel secured. The site also offered ample space for landing and flying fields so that ground-to-air communications with airplanes could be readily developed. These attributes were the major reasons for locating a Signal Corps camp at the New Jersey site.[4]

CAMP ALFRED VAIL, 1917-1925

The first Signal Corps camp on the Monmouth Park site was officially opened on June 17, 1917. Designated Signal Corps Camp Little Silver, New Jersey, it was placed under the command of Lt. Col. Carl F. Hartmann. On the following day, the First and Second Reserve Telegraph Battalion, recently called into active service, arrived at the camp. Living conditions at Camp Little Silver were primitive, and troops were housed in long rows of tents. These had been constructed by a detachment of Signal Corps Depot Company H, which had arrived at the site in the beginning of June. Under the command of Lt. Adolph J. Dekker, this group of 32 men had been responsible for clearing the land of brush and for constructing the tent camp, tent hospital and quartermaster installations.[5]

By the end of June, camp personnel totaled 25 officers and 451 enlisted men. During July, a nontechnical training program was established. The program included physical training, basic Army training, and basic Signal

Corps training drills including instruction in cryptography, heliography, and semaphore. Construction of the first wooden cantonment buildings to provide a more permanent Signal Corps camp was begun during this month.[6]

Signal Corps Camp Little Silver was redesignated Camp Alfred Vail on September 15, 1917, under the command of Maj. Arthur C. Cowan. By 1919, Camp Alfred Vail was the best equipped Signal Corps camp. Three signal battalions, six telegraph battalions, two depot battalions, two squadrons for air service personnel, and two service companies, with a total of 1083 officers and 9313 enlisted men, were housed at the camp. In the 19 months of the camp's existence, 129 semipermanent structures had been built. A former swamp and potato fields had been converted into four company housing areas and about 200 tents had been erected. Camp roads had been constructed and a marsh had been transformed into a parade ground.[7]

The camp was located on a peninsula of land with Parker's Creek to the north and Oceanport Creek to the south. The New York and Long Branch Railroad formed the eastern boundary and the Monmouth County Electrical Railroad along Long Branch Boulevard formed the western boundary. Access to the New Jersey Southern Railroad was available along the southern boundary. The camp was bisected by Oceanport Avenue, which connected Little Silver, New Jersey, to the north with Oceanport, New Jersey, to the south.[8]

Along the east side of Oceanport Avenue were four wood-frame airplane hangars built in the spring of 1918. Three hangars were used for housing airplanes and one (Building 104) was used as the airplane repair shop. The first planes arrived at Camp Alfred Vail in March 1918 under the command

of the 122nd Aero Squadron. The first test flights were made in May 1918 to determine the uses for airplanes in radio communication. The flying fields were located on the site of the old racetracks. By the fall of 1918, the 122nd Aero Squadron was operating two De-Haviland 4's, nine Curtis JN 4-H's, six Curtis JN 4-6HO's, and three Curtis JN 4-D's; this was the largest number of planes ever housed at Camp Alfred Vail. Following the Armistice in November 1918, all aeronautical property was moved from Camp Alfred Vail and all flying activities at the camp ceased. The Division of Military Aeronautics and the Bureau of Aircraft Production were created and the Air Corps, which subsequently became a separate service of the Army and ultimately the U.S. Air Force was separated from the Signal Corps. The Signal Corps was thus relieved of its aviation duties, with the exception of designing and manufacturing all radio apparatus required in the Air Corps.[9] (Figures 5 and 6)

Also to the east of Oceanport Avenue were the Signal School headquarters, the Commanding Officer's House (southeast corner), a horse stable, and Quartermaster and Ordnance warehouse buildings. These warehouses, a collection of 12 wood structures, were located along a siding of the New York and Long Branch Railroad; from here, coal and supplies were trucked westward to the camp.

To the west of Oceanport Avenue was a 1-mile oval racetrack and a 1-1/2-mile straight track that extended westward to Long Branch Boulevard. These racetracks were remnants of Monmouth Park. Along the eastern end of the oval track, near Oceanport Avenue (and the present Barker Circle Barracks area) were the Radio Laboratory buildings.[10]

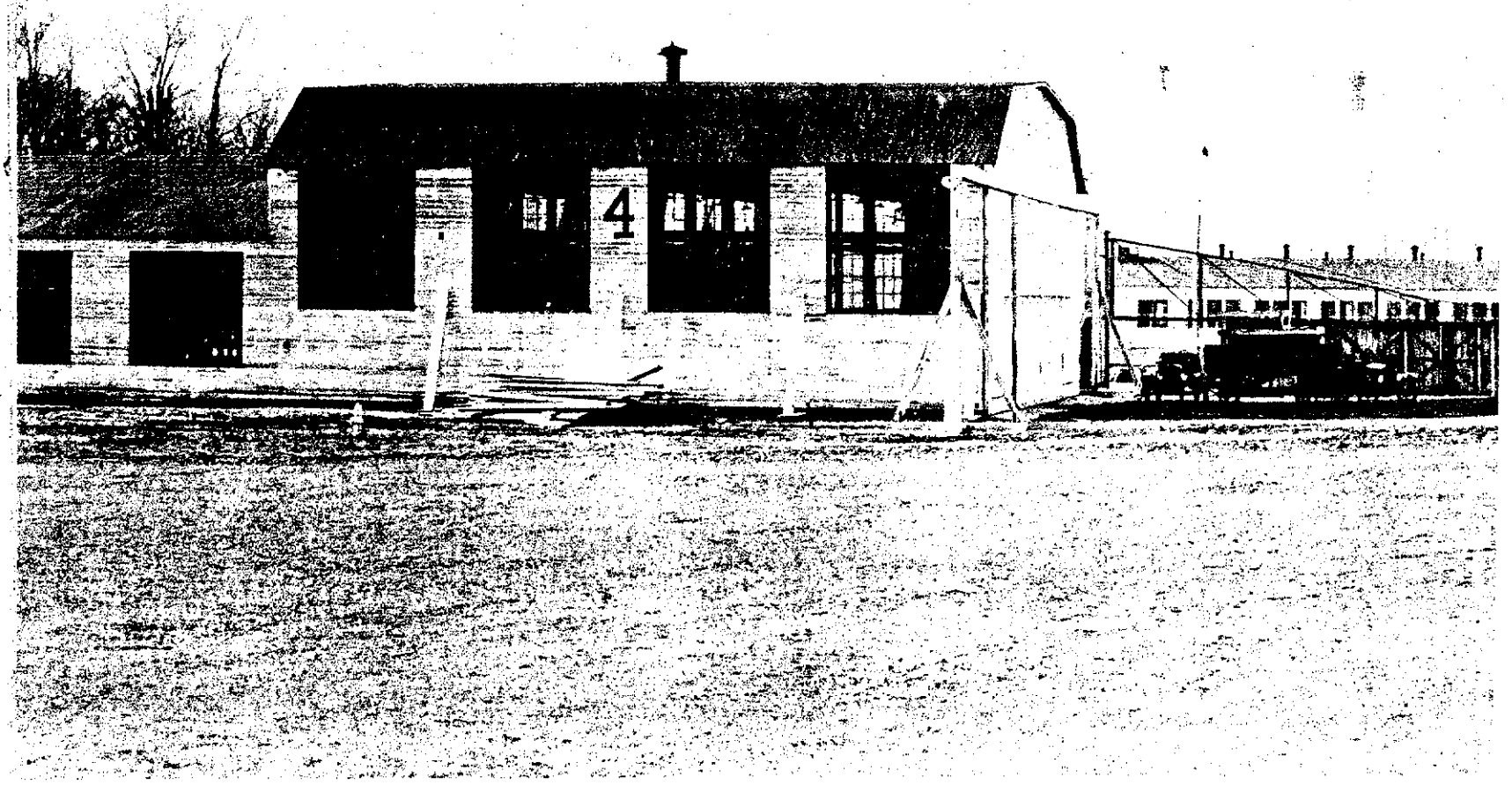

Figure 5: Photograph taken January 7, 1919, showing Hangar 4, the Airplane Repair Shop. View of the Northeast Corner. (Source: U.S. Army Photograph CECOM Museum)

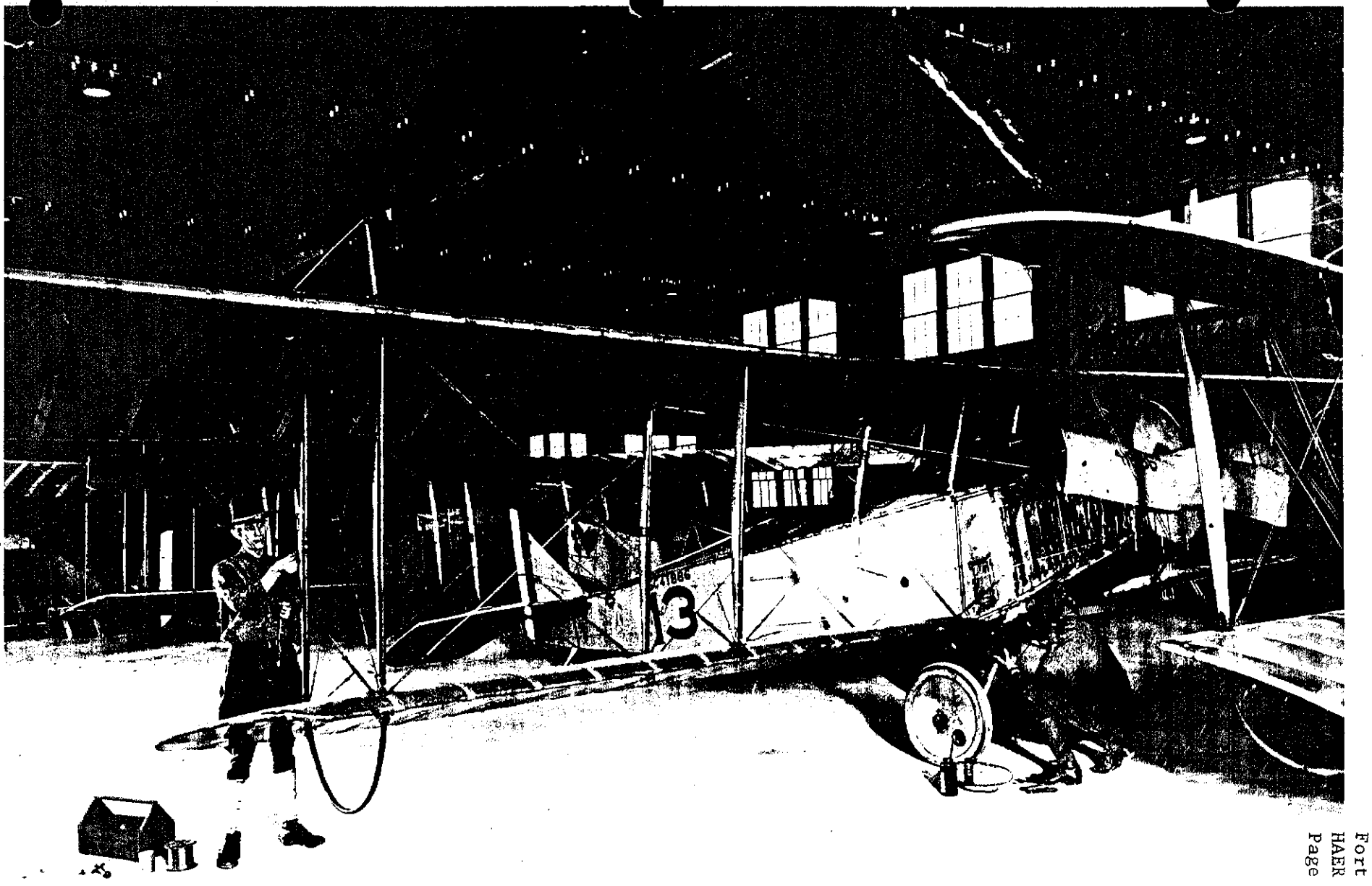

Figure 6: Photograph taken c. 1918-1919 showing Signal Corps enlisted men installing a radio set in an airplane. (Source: U.S. Army Photograph, CECOM Museum)

Maj. Gen. George O. Squier was chiefly responsible for establishing the Radio Laboratories at Camp Alfred Vail. His program called for "a special laboratory devoted exclusively to development work" that would be entirely independent of private commercial facilities. The laboratories were housed in a group of large, 1-story wood buildings surrounded by a 10-foot barbed wire fence. The buildings housed technical facilities such as model shops, drafting rooms, and research labs needed for the development of ground-to-air radio.[11]

The first commanding officer of the laboratories was Maj. L. B. Chambers, who assumed command in February 1918. By the following May, the laboratories were producing enough radio equipment to require 90 to 95 test flights per week. The Radio Laboratories established standards and specifications for two vacuum tube radio sets and a number of other devices, including the radio telephone, the voice radio, and the airborne radio (SCR-68) and its ground receiver component (SCR-67). These developments represent a large portion of the Signal Corps' outstanding contribution to radio engineering in World War I.[12]

Further to the west of Oceanport Avenue and just to the north of the oval racetrack were the World War I cantonment barracks. Constructed during 1917-19, the structures were typical one-story wood frame buildings designed as temporary facilities for the training and mobilization of troops for World War I. About two dozen barracks were constructed and laid out in parallel rows. Also built in this area was a headquarters building, a hospital, a bakery, and two stables.

Adjacent to the troop cantonment area was an area of pigeon lofts, both fixed and mobile, constructed during 1917-18 in order to fill the requests for homing birds for service in France. This was the Army's first homing-pigeon program, and experienced nonmilitary pigeon trainers were brought to Camp Vail. Following the Armistice, the headquarters of a pigeon service was established at Camp Alfred Vail, and for two decades, new techniques for training were tested and employed.[13]

In the northeast corner of the installation, along Oceanport Avenue, were the garages. Land to the west of the old oval racetrack was undeveloped by the military but included several farm structures.

Following the Armistice in November 1918, research activities in the design and development of Army communications equipment were continued at the Signal Corps Laboratories, although on a reduced scale because of a meager budget. In October 1919, the Secretary of War approved the relocation of the Army Signal School from Fort Leavenworth, Kansas, to Camp Alfred Vail, in order to consolidate all Signal Corps activities at one installation. The Signal School trained signal unit leaders to serve as qualified instructors for the Regular Army, National Guard, Reserve Officer, and Reserve Officer Training Corps programs. In 1923, the curriculum was divided into four departments: communication engineering, applied communication, general instruction, and enlisted specialists. Additional courses in meteorology, photography, and training literature were offered between 1919 and 1925. The Signal School originally was located in the four airplane hangars on Oceanport Avenue that had been vacated by the Air Corps following World War I. The four hangars were used as classrooms and workshops with Hangar 1 serving as the center of radio instruction through World War II.[14]

The only remaining World War I structure is Hangar 4 (Building 104). Built in 1918 as the airplane repair shop, the hangar was enlarged in 1927 and converted to a printing shop where Signal School literature and training manuals were published. The building still is used as the post's printing shop. Hangars 1, 2, and 3 were razed in 1950 and all other buildings constructed during 1917-18 were demolished by the Army during the 1920s and 1930s. (Figure 7)

Several other buildings, which are still standing, were constructed immediately following World War I. A box and crate shop (Building 142) was constructed in 1922 and is still used for the same purpose. A house and a garage (Buildings 202 and 204) constructed in 1925 also remain standing.

FORT MONMOUTH BEFORE WORLD WAR II

The Office of the Chief Signal Officer announced on August 6, 1925, that Camp Alfred Vail would become a permanent installation, and it was renamed Fort Monmouth to honor the American revolutionary battle of Monmouth Courthouse. In April 1926, Fort Monmouth Commander Col. James B. Allison met with former Camp Commander Col. John E. Hemphill, Chief Signal Officer Gen. Charles M. Saltzman, and Col. Francis B. Wheaton of the Quartermaster Corps to discuss the first permanent building program at Fort Monmouth.[15]

The original plan for the construction of permanent buildings at Fort Monmouth called for the entire post to be placed west of Oceanport Avenue around the old Monmouth Park Racetrack and for the portions of Camp Alfred Vail to

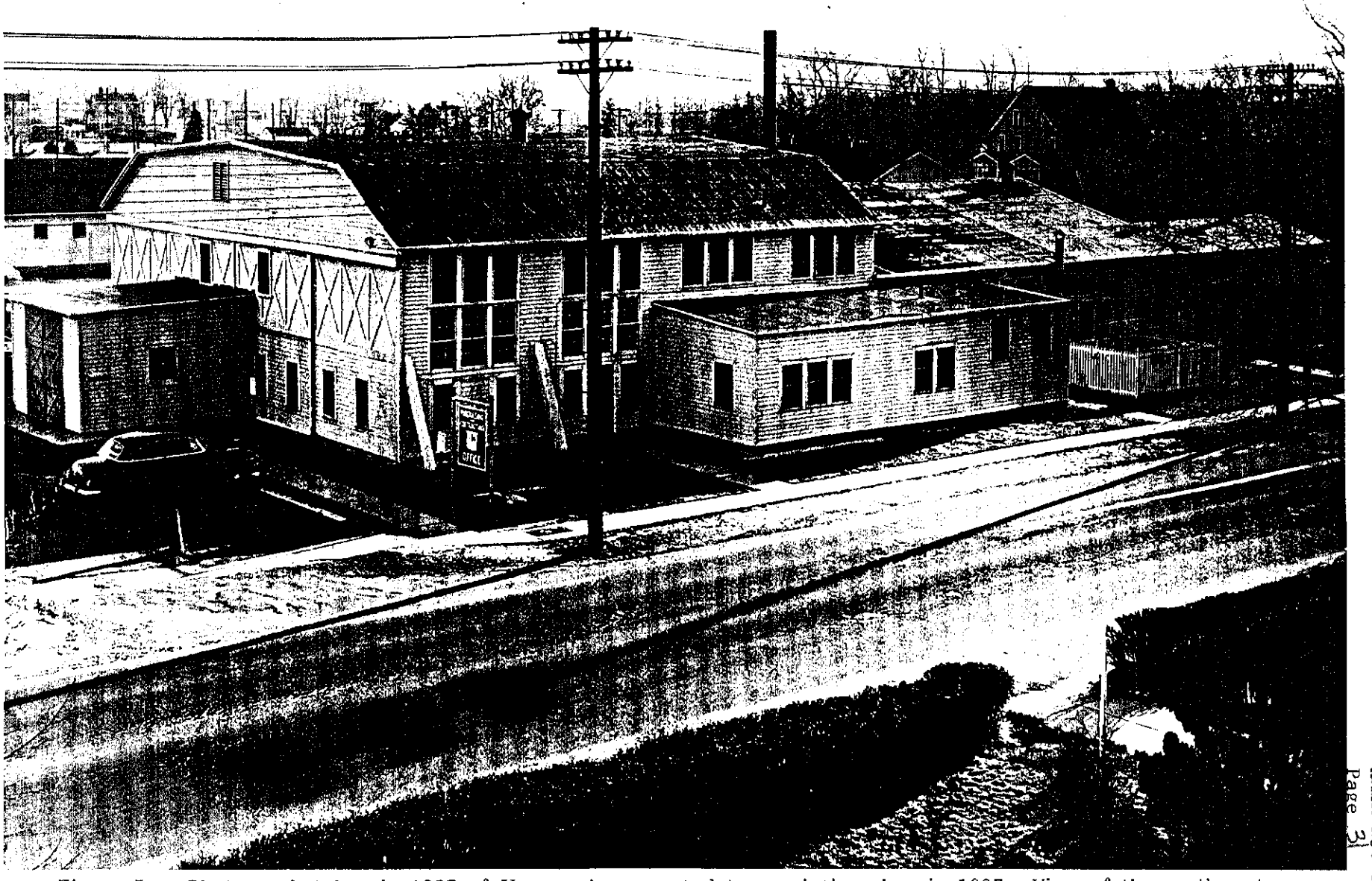

Figure 7: Photograph taken in 1957 of Hangar 4, converted to a printing shop in 1927. View of the northwest corner (Source: U.S. Army Photograph, CECOM Museum)

the east of the avenue to be abandoned. This plan was slightly modified, however, for the sake of economy and to facilitate rail transportation, and the post was redesigned to occupy both sides of Oceanport Avenue, an arrangement similar to that of the temporary World War I camp.

The building plan for Fort Monmouth provided for a formal military arrangement with a symmetrical Y-shaped layout slightly altered to meet existing local conditions. The central focus for the plan was a new headquarters building. In addition, open spaces, including a central parade ground, were included to insure a suitably impressive post for the U.S. Army Signal Corps. (Figure 8)

The plan for the first permanent buildings at Fort Monmouth designated construction of several building types including quarters for both officers and noncommissioned officers, barracks for enlisted men, and a Quartermaster area consisting of warehouses, garages, and other service buildings. Also included were plans for the construction of a post hospital, a theatre, a firehouse, a permanent Signal Corps laboratory, and a new headquarters building.[16]

Congressional funding was provided and permanent construction began in February 1927, with the erection of four barracks in the area presently known as the Barker Circle Barracks area. These four buildings (Buildings 205-208) were completed by October 1927, they are similar in appearance but vary slightly in size. The 3-story reinforced concrete and brick buildings are of the same general layout and were designed to quarter 1 company each for

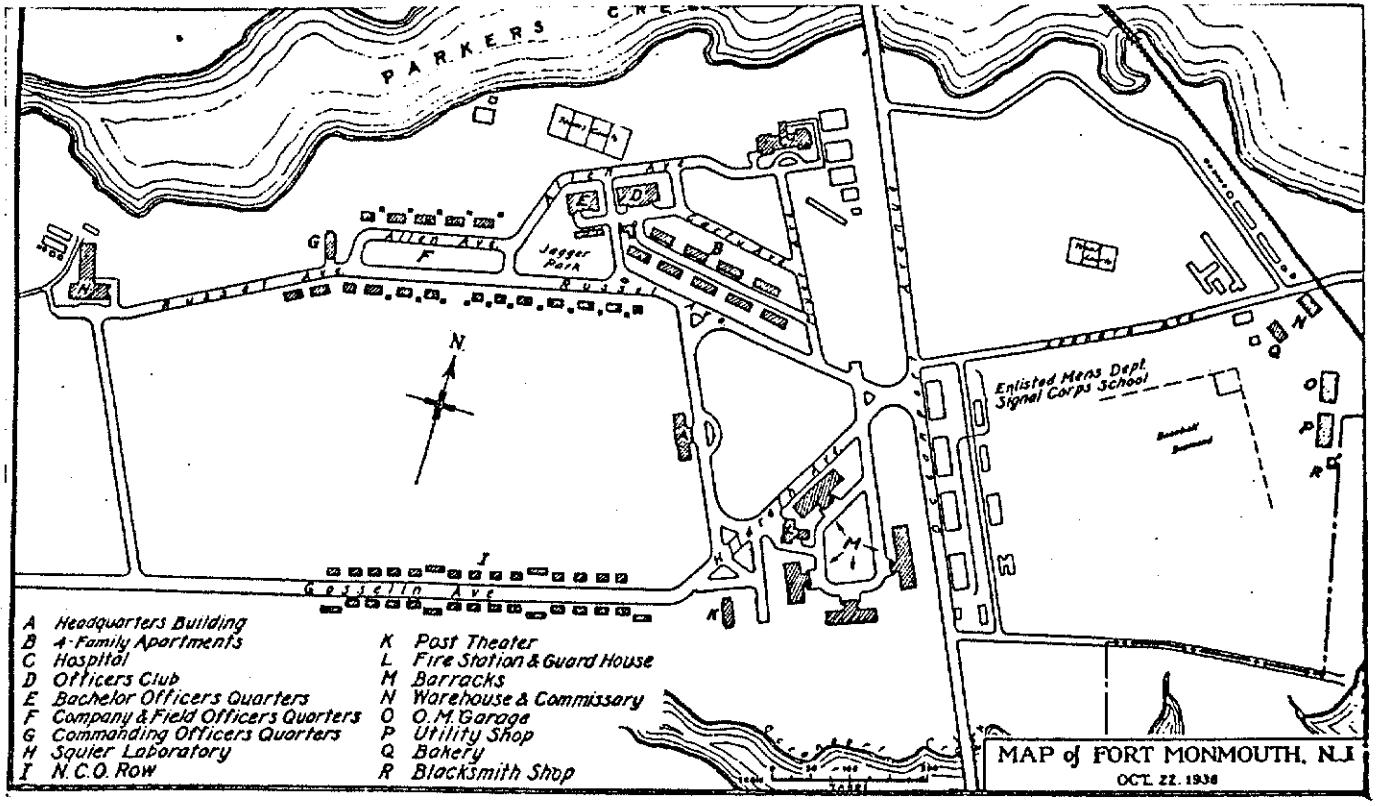

Figure 8: 1936 map of Fort Monmouth, showing permanent construction projects completed between 1926-1936. (Source: Signal Corps Bulletin #94, Jan-Feb 1937, p. 55)

a total capacity of 805 men. In October 1934, Building 207 was enlarged on the north end to accommodate the post Army Band. In 1940, a fifth structure (Building 287) was built; it is similar in construction to the other four barracks.[17] (Figure 9)

The 1927 Congressional funding also provided for construction of permanent post hospital and medical detachment barracks. The hospital (Building 209, now Allison Hall) was designed as a broad H-shaped building and was completed in April 1928; however, the west side of the H originally was omitted. The building is a two-story brick building with a concrete structural frame, and each ward on the east side opens onto screened porches. The medical detachment barracks, a wing centered on the crossbar of the H, was built in 1928 and provided space for 35 beds and medical, surgical, dental, and other services for the entire hospital. In March 1934 the west wing was constructed and an addition to the north wing was completed. With these two additions, the hospital provided 56 beds and facilities for 26 enlisted men assigned to the medical detachment.[18] (Figure 10)

The construction of permanent housing at Fort Monmouth was begun in 1927 and continued through 1936. Funds for this construction were authorized in a number of Congressional bills passed during this period. Four areas of housing were constructed: an area of two-family houses for noncommissioned officers (NCO); an area of houses for field officers and company officers; an area of four-family housing units; and an area for bachelor officers' quarters (BOQ).

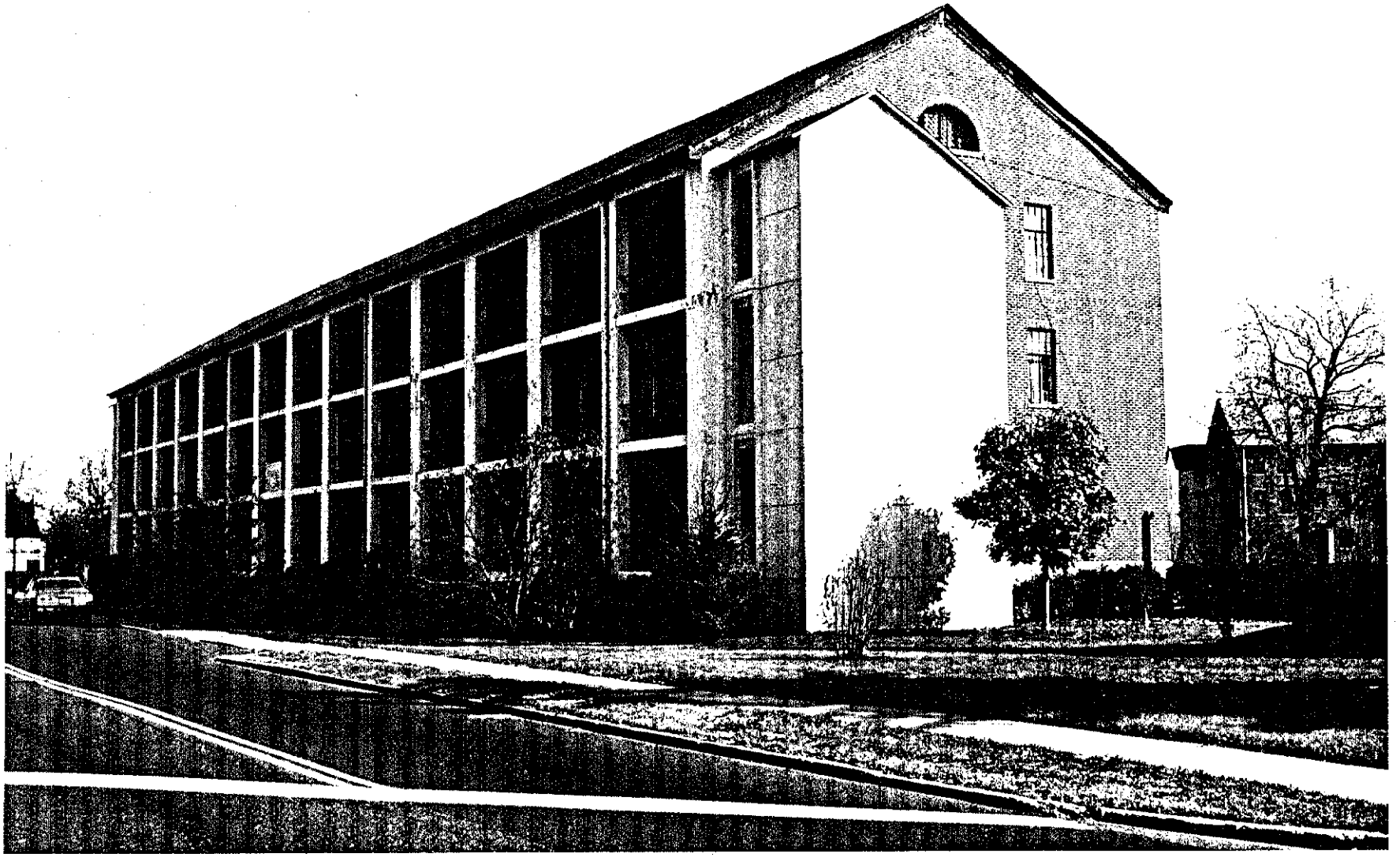

Figure 9: Photograph taken in 1982 showing present condition of Barker Circle Barracks. View of Building 205 looking southeast. (Source: Field Inventory Photograph)

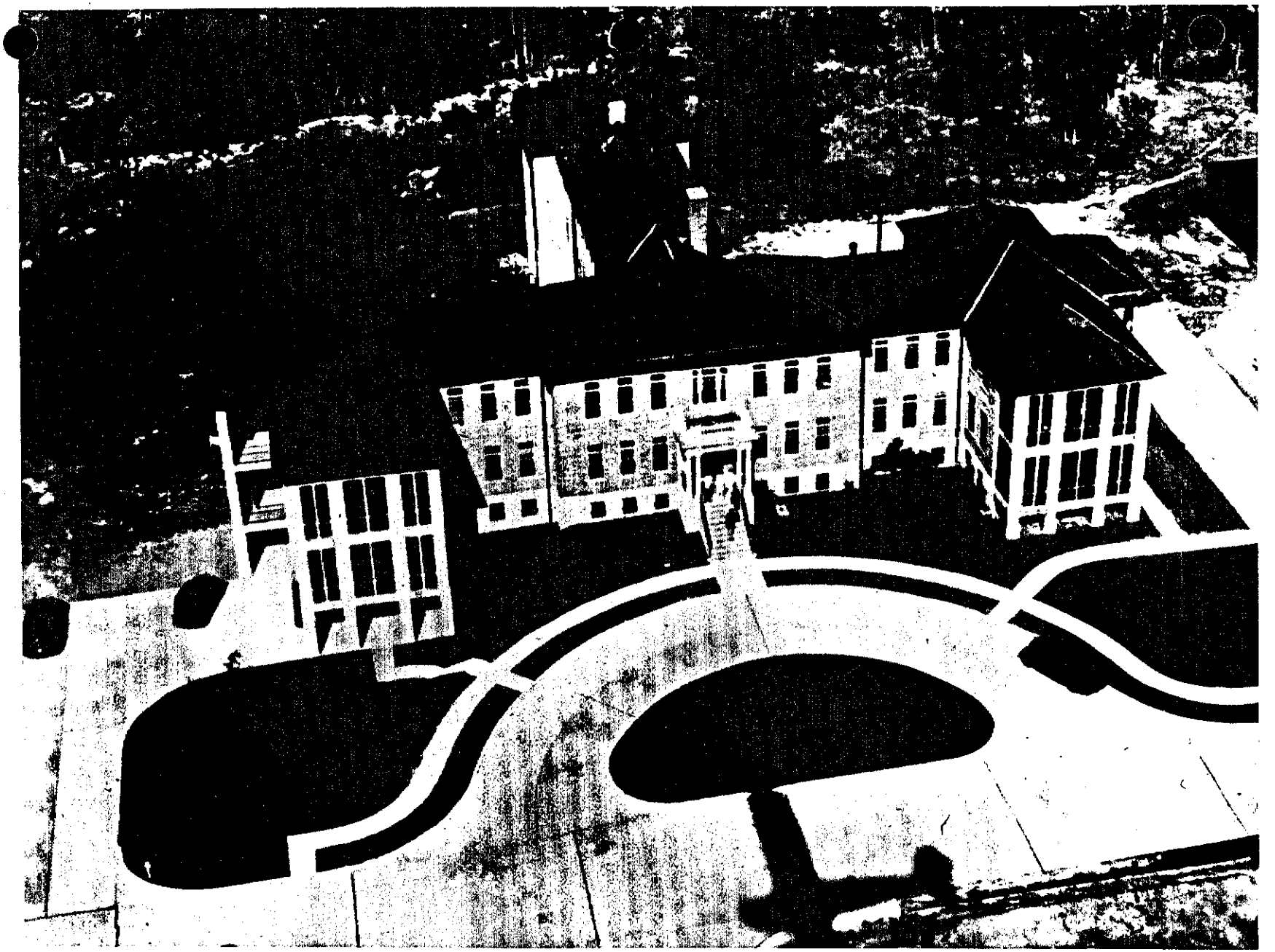

Figure 10: Photograph taken c. 1934 of the hospital (Building 209, now Allison Hall) showing view of the south facade. Note screen porches opening off each ward. (Source: U.S. Army Photograph, CECOM Museum)

The NCO housing was constructed along Gosselin Avenue. This street was laid out on the site of the original straightaway of the old Monmouth Park Racetrack, and the housing area, consisting of 25 two-family houses and six garages, occupies both sides of this roadway. Construction of these houses began in 1927 and continued through 1934. Work began at the eastern end of the housing area (Building 233) and progressed westward along Gosselin Avenue. The area was completed in roughly three different construction stages with six buildings being completed in 1931 (Buildings 234-239), seven in 1932 (Buildings 240-246), and eleven (Buildings 247-258) in 1934.

The houses are simple two-story brick buildings with either gable or hip roofs. Some buildings have brick or wood sun porches on the ends of the structure and others have enclosed entry porches. All of the houses constructed on Gosselin Avenue are based on a standard Quartermaster Corps design, and some of these buildings were completed as Works Progress Administration (WPA) projects.[19] (Figures 11 and 12)

The officer's housing area was constructed along Russel and Allen Avenues to form a central open space known as Voris Park. Construction began in 1927 and was completed in 1935. Two different types of houses—duplex units for company officers and single-family houses for field officers and for the commanding officer--were built. All of the houses are based on standard Quartermaster Corps designs and all are two-story brick buildings with basements and attics.[20] (Figure 13)

The company officers' two-family housing units were constructed in three phases: Buildings 211-213 were completed in 1927; Buildings 214, 218, 219,

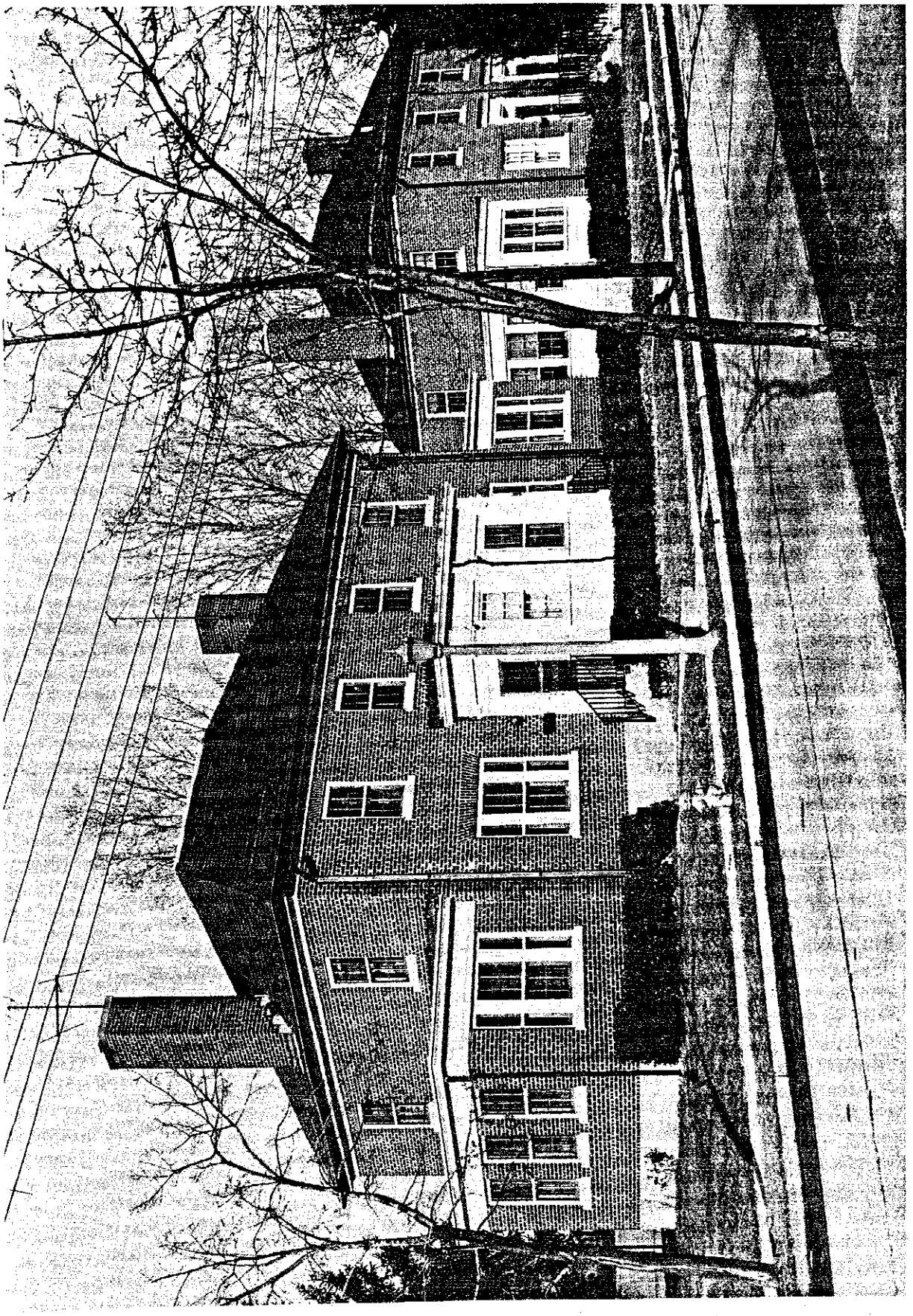

Figure 11: Photograph taken c. 1974 of Noncommissioned Officers' Housing on Gosselin Avenue. View showing main facades of two houses. (Source: "Fort Monmouth Installation Brochure," 1974)

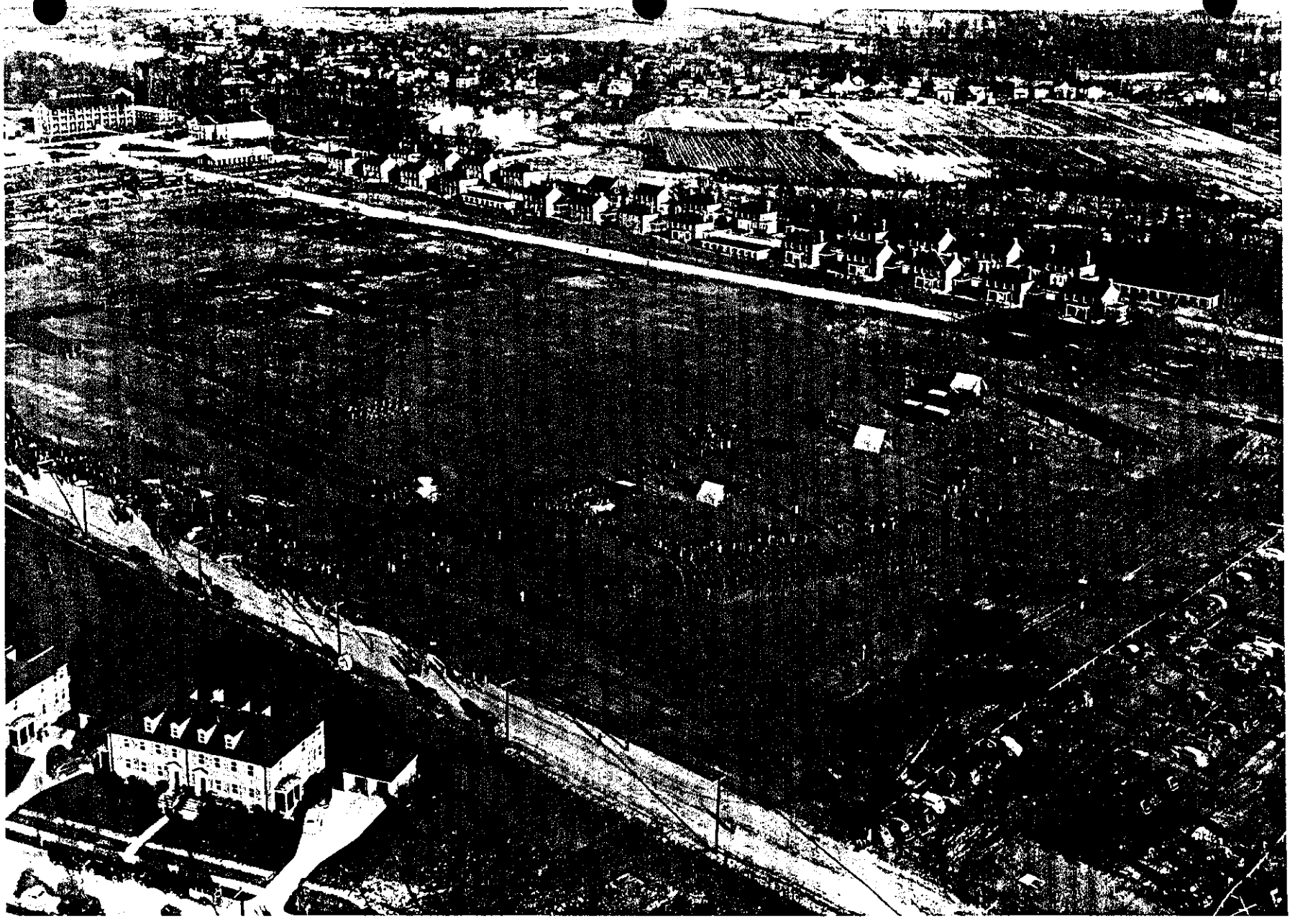

Figure 12: Aerial photograph taken in 1941 showing Gosselin Avenue housing in the background. Note troop exercises on the Central Parade Ground. (Source: U.S. Army Photograph, CECOM Museum)

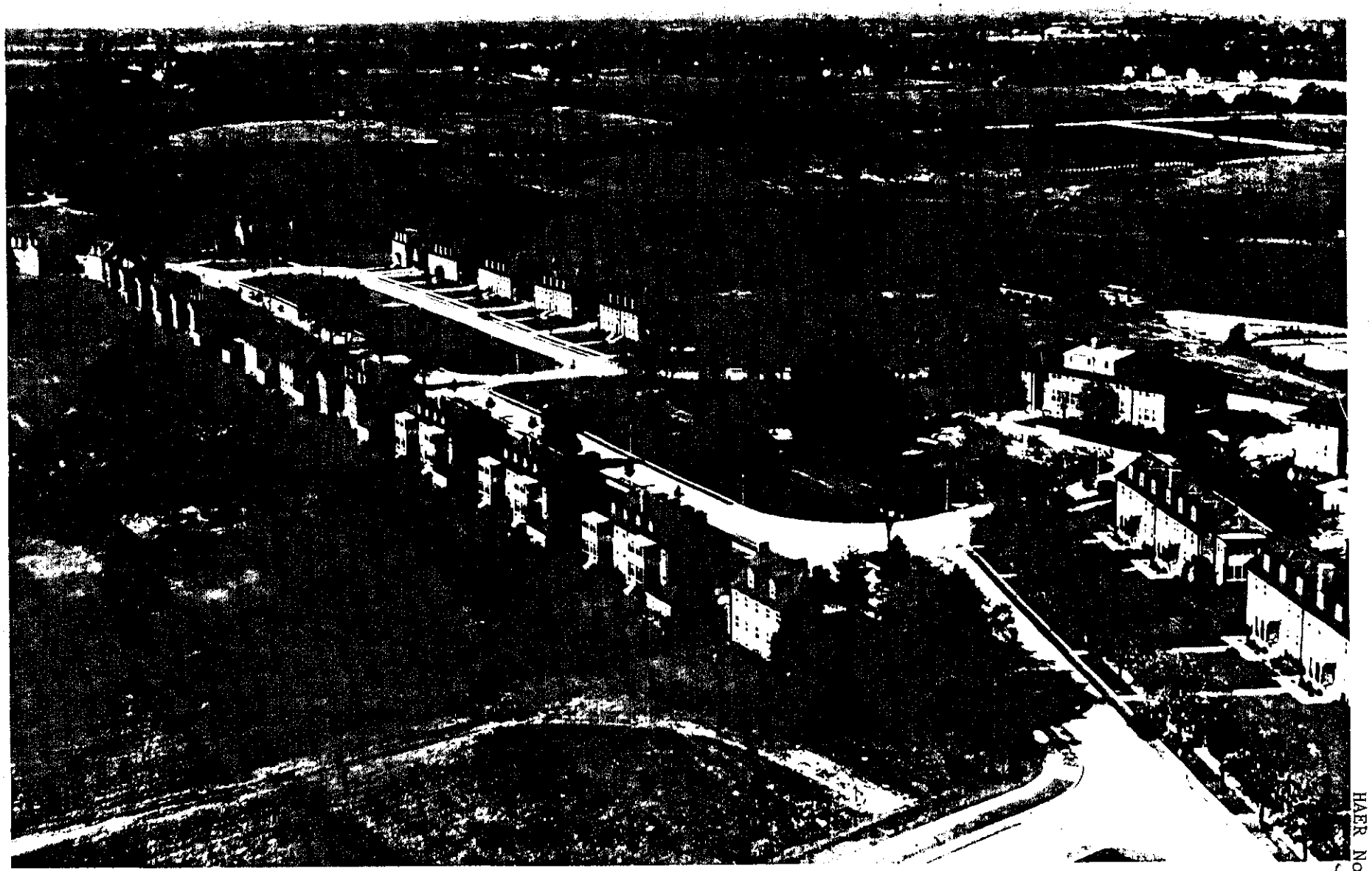

Figure 13: Aerial photograph taken in 1936 of the Officer's Family Housing area around Voris Park. View looking west with Russel Avenue in the foreground and Parkers Creek in the background. (Source: U.S. Army Photograph, CECOM Museum)

and 225-228 in 1932; and Buildings 220, 222, and 223 in 1935. All are simple brick structures that have slate-shingle gable roofs with four roof dormers on the front and sun porches on the rear. Each unit also has a separate garage. Three different designs for single-family houses were used. Buildings 215 and 216, completed in 1931, are the smallest single-family houses built. Each is a square brick building with a slate shingle cap roof, and each includes a detached garage. Buildings 221 and 224, constructed in 1934, are substantially larger houses. They are rectangular brick structures that have slate-shingle gable roofs and three roof dormers. Each house has two end wings, one containing a garage. The commanding officer's residence, completed in 1936, was the final house built in this area. The large colonial residence is situated at the end of Voris Park, an imposing location in the officers' housing area. The house's design incorporates an entry vestibule with colonial detailing and a large portico on the rear that overlooks Parker's Creek. The design of this house is based on a standard Quartermaster Corps plan.[21] (Figures 14, 15, and 16)

The third housing area, located between Russel and Carty Avenues and consisting of 9 four-family housing units, was built between 1929 and 1932. The houses are laid out in two rows of houses with a central service lane between the rows providing access to garages. The houses, which are comfortably set back from the avenues, are two-story brick buildings with basements and attics. The buildings have slate-shingle gable roofs with roof dormers and the end units have enclosed sun porches. The layout and design of these structures is based on a standard Quartermaster Corps plan.[22] (Figures 17 and 18)

Figure 14: Photograph taken in 1930 showing Building 216 under construction. View is looking northeast at rear of house. (Source: U.S. Army Photograph, CECOM Museum)

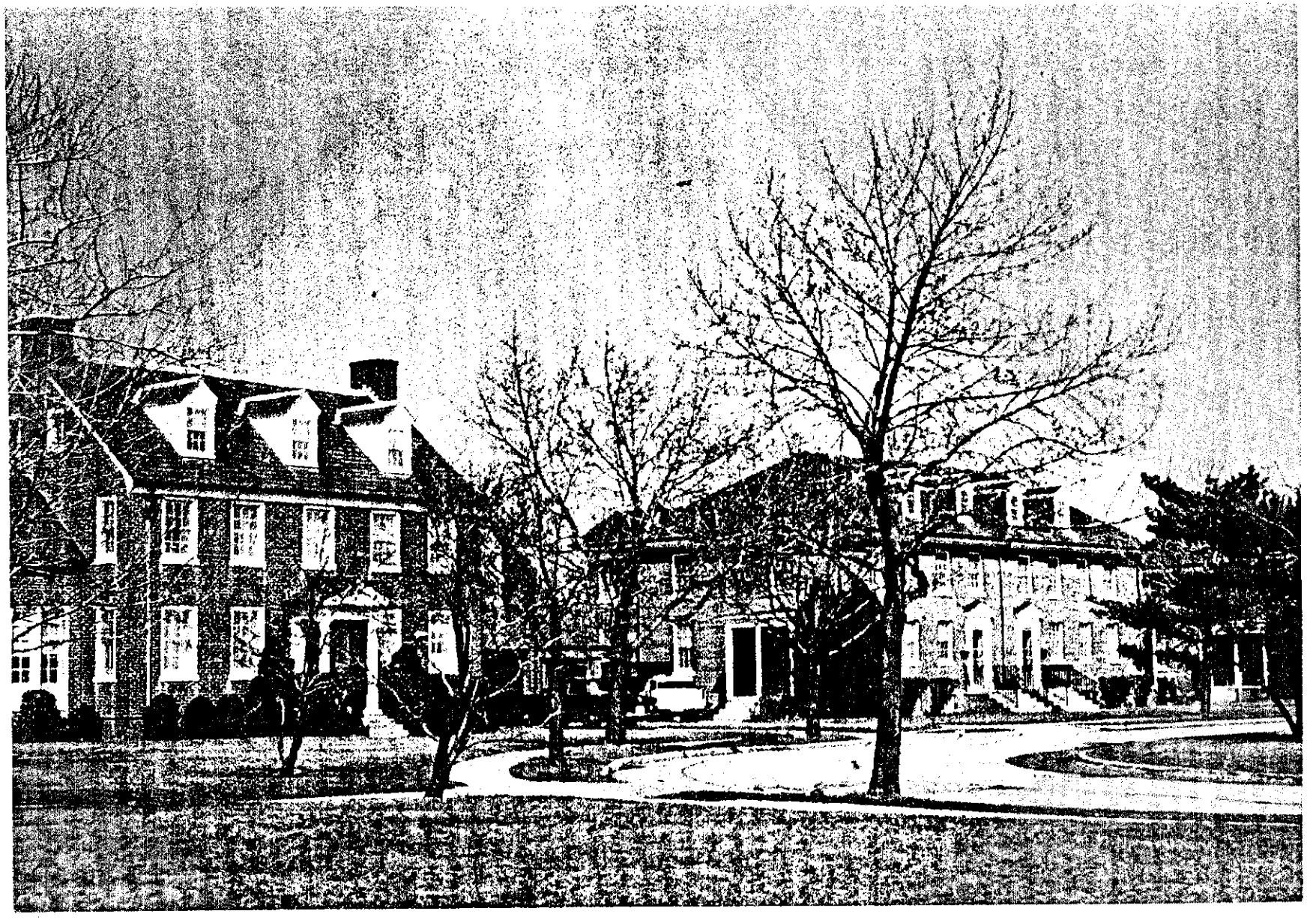

Figure 15: Photograph taken c. 1974 showing two types of houses constructed in the Voris Park area. To the left is a single-family house (Building 224) completed in 1934, and to the right is a two-family house (Building 225) completed in 1932. (Source: Fort Monmouth Installation Brochure, 1974)

Figure 16: Photograph taken in 1982 showing the Commanding Officer's House (Building 230). View is from the southeast showing main facade. (Source: Field Inventory Photograph)

Figure 17: Photograph taken showing four-family housing unit under construction. (Source: U.S. Army Photograph, CECOM Museum)

Figure 18: Photograph taken c. 1974 showing four-family housing looking northwest on Russel Avenue. (Fort Monmouth Installation Brochure, 1974)

Two BOQ buildings are located between Voris Park and the four-family housing area. The first BOQ (Building 270, also known as Officer's Club, and now used as the NCO Open Mess) was completed in August 1929. The two-story brick building was designed in a broad H shape with a glass enclosed porch along the front of the building. A semidetached kitchen and boiler room was located in the rear. On the first floor was a combined assembly and dining room with a lounge, an office for the Fort Monmouth Army Officers' Mess, a bar, a lady's retiring room, and four sets of living quarters. On the second floor were 12 apartments and, in the attic, were quarters for 2 servants or orderlies. (Figure 19)

The second BOQ (Building 271) was completed in October 1931. This two-story brick building was built with eight apartments (similar to those in Building 270) on the first and second floors.[23]

The 579-seat post theater (Buildling 275, now Kaplan Hall and the U.S. Army Communications-Electronics Museum) was erected with funds from the Army Motion Picture Service and was completed in 1933. The two-story brick theater building is of fireproof construction, and a projection room housed controls for the operation of the stage curtain, auditorium and stage lights, and sound equipment. The first War Department Theatre No. 1 performance was given on December 15, 1933.[24] (Figure 20)

The quartermaster area was constructed to the east of Oceanport Avenue beside the New York and Long Branch Railroad siding. The area originally consisted of five buildings housing the maintenance and storage facilities for

Figure 19: Photograph taken in 1982 of the Enlisted Officers Club or Bachelor Officers Quarters (Building 270). View is from the northwest showing main facade. (Source: Field Inventory Photograph)

Figure 20: Photograph taken in 1982 showing Kaplan Hall (Building 275) originally the Post Theatre. This building now serves as the CECOM Museum. View from the northwest showing the main facade. (Source: Field Inventory Photograph)

the entire post. The blacksmith shop (Building 281), completed in January 1934, was the first finished structure in this area. The one-story brick structure was erected as a location for shoeing horses, but with the phasing out of horses for military use, the building was used as part of the utility shop.

The bakery (Building 276) was completed in June 1934. It is a one-story building built of reinforced concrete and brick with built-up roofing over wood framing. The first floor was devoted to the bakery proper with fuel room and firing space in an extension to the rear. Bread for the post was baked in modern equipment that had a capacity of 600 loaves per day. Adjacent to the bakery building were separate quarters for the bakers.

The quartermaster warehouse and commissary (Building 277), built on a siding of the New York and Long Branch Railroad, was completed in September 1934. The building is a two-story structure with a basement; it is built of reinforced concrete with brick veneer and has a slate shingle gable roof. The first floor was devoted to the post commissary with an office, sales-room, storerooms, and cold-storage plant, and the second floor was devoted to the storage and issue of clothing. (Figure 21)

The quartermaster garage and the utility shop were the last structures built in this area during the permanent building program. Both were completed in November 1934, and both were constructed according to standard Quartermaster Corps plans. The garage (Building 279) is a one-story building with a concrete foundation, brick walls, and a steel structural frame that supports single-span steel roof trusses. It was designed with industrial steel sash windows and

Figure 21: Photograph taken in 1982 showing the Quartermaster Warehouse and Commissary (Building 277). Now an administration building. View from the northwest showing main facade. (Source: Field Inventory Photograph)

large bifold metal doors on both ends. The utility shop (Building 280) adjacent to the garage is of the same design but has doors on the north end only. The utility shop housed the carpenter, electrical, and plumbing shops as well as the steam heating plant that provided heat to both the garage and the utility shop buildings.[25]

The fire station and guardhouse (Building 282) was built in the Barker Circle Barracks area and was completed in January 1935. It was designed in the colonial style and is a two-story brick building with space for four fire trucks and an office on the first floor, a firemen's dormitory on the second floor, and a guardhouse and prison in a wing to the rear.[26]

Squier Laboratory (Building 283, designated Squier Hall in 1955) was designed by Rodgers and Poor, architects from New York City, and was completed in March 1935. It is located to the west of the officer's housing area on a knoll above Parker's Creek and is well separated from other activity areas on the post. The building was designated Squier Signal Laboratory in 1945 and served as the headquarters of the Signal Corps Engineering Laboratory until 1954.

As originally constructed, the laboratory consisted of two parts: the administration and laboratory section and the shop section. The former is a two-story brick building with a steel structural frame and a flat roof. On the first and second floors were offices, drafting rooms, and laboratories. The building contained an extensive electrical distribution system, an automatic

telephone system, and a 4000-pound capacity elevator. An experimental light tunnel was constructed in the basement. The shop section, a one-story brick building with a steel structural frame and an industrial sawtooth roof, contained various shops and rooms for sandblasting and metal plating.[27] (Figure 22)

The headquarters building (Building 286) was the final element of the 10-year permanent construction program. It was named Russel Hall, honoring Maj. Gen. Edgar Russel, Chief Signal Officer of the American Expeditionary Forces during World War I. Designed by Harry Sternfield of Philadelphia in collaboration with the Office of the Constructing Quartermaster, the building was completed in May 1936. It is situated directly opposite the main entrance to the Post on Oceanport Avenue, an important symbolic location on the Fort Monmouth site. Directly west of Russel Hall is Greely Field, the main parade ground, which is located on the infield of the old Monmouth Park Racetrack.

Russel Hall is a brick and Indiana limestone art-deco style building with a four-story central pavillion and three-story flanking wings. It features granite steps that lead to the main entrance doors; to either side of the doors are sculptured panels commemorating Signal Corps activities in the Civil War and World War I. The first floor of Russel Hall provided space for the post library, the chaplain's office, telephone switchboard rooms, and a court martial room. The second floor provided offices for the headquarters; classrooms were located on the third floor and a large map and war game room was located on the fourth floor.[28] (Figure 23)

Figure 22: Aerial photograph taken c. 1974 of Squier Laboratories completed in 1935 showing office wing and shop section of laboratories. The wing on the left was completed in 1955. View looking north showing Parkers' Creek in the background and World War II laboratories and warehouses to the left. (Source: U.S. Army Photograph, CECOM Museum) .

Figure 23: Photograph taken in 1949 of Russel Hall. View looking west showing main facade. (Source: U.S. Army Photograph, CECOM Museum)

In addition to the erection of permanent buildings, the 10-year building program also included numerous utility projects. The sewage disposal plant (Building 259) located on Parker's Creek and the incinerator located near Oceanport Creek on the post's southern boundary were both completed by 1938. A system of well-lighted walkways and four permanent roadways were completed by June 1936. Recreational facilities consisting of a nine-hole golf course, tennis courts, baseball diamonds, and a football field also were completed during this period.[29]

These facilities, built under the first permanent building program at Fort Monmouth, brought about radical changes in both the physical appearance of the installation and the quality of life for military personnel. Between 1927 and 1937, the post was transformed from a collection of poorly maintained World War I temporary buildings to a permanent Army fort that offered fine housing facilities, an impressive permanent administration building, and modern laboratory facilities.

All of the buildings constructed during this period remain standing today. All are well maintained and the durability of the structures has been an important feature of their design. In addition, the planting around these buildings has matured, giving an added dignity to the buildings. Although many of the structures now serve different functions or have received minor modifications, the basic 1930s plan of Fort Monmouth remains intact. To a great extent, the permanent building program of this period has determined the physical development of the post. The architectural unity and the quality of the open spaces have been important in establishing a "sense of place" at Fort Monmouth.

FORT MONMOUTH DURING WORLD WAR II

The outbreak of war in Europe caused President Franklin D. Roosevelt to proclaim a state of "limited emergency" in September 1939, and in September 1940, the Selective Service Act became law, requiring peacetime military service. The imposition of compulsory peacetime military service required an enormous increase in facilities for training recruits. In July 1940, the entire curriculum of the Signal Corps School at Fort Monmouth was revised and plans were made for a 67 percent increase in capacity. The Enlisted Replacement Center, established in January 1941 under the command of Col. G. L. Van Deusen, initiated a one-year training program for enlisted personnel. By December 1941, the capacity of that program had been expanded to 7000 men and the training period had been reduced to 13 weeks.[30]

Activation of new Signal Corps units in World War II demanded an increase in the number of qualified and well-trained officers, and an Officer Candidate Department was established at Fort Monmouth. In December 1941, a total of 434 candidates were in training, but by August 1942, the quota had expanded to a record high of 1100 men.

By 1942 all training functions at Fort Monmouth had been consolidated as the Eastern Signal Corps Training Center. After further reorganization, recruit training and replacement had been refined to a precision process. During the 30 months of its existence, the Eastern Signal Corps Replacement Center trained more than 60,000 Signal Corps specialists. The Officer Candidate School had enrolled 21,754 students by June 1943, 70 percent of

whom were graduated. Activities reached their apex in early 1943, and in May of that year deactivation of the Replacement Training Center was begun.[31]

At Fort Monmouth, four major areas of troop housing--the 400, 600, 700 and 800 areas--were constructed between 1940 and 1942. The 400 area, composed of approximately 80 buildings, was constructed during 1940-41 to the east of Oceanport Avenue on the site of a former polo field. Cantonment barracks were arranged in four parallel rows, evenly spaced around two parade ground spaces. Building 453, a representative barracks, is constructed according to standard 700 Series Quartermaster Corps plans drawn up in 1938. The 700 Series are simple, two-story wood barracks buildings. Also remaining in the 400 area is a firestation (Building 477), a bakery (Building 479) and two warehouses (Buildings 480 and 481). Each division area also included general instruction buildings and mess halls. Also to the east of Oceanport Avenue were two areas of tent housing with wood service buildings including mess halls and latrines. (Figure 24)

Three divisional cantonment areas were constructed to the west of Oceanport Avenue in 1940-41. They were similar to the 400 area housing, although with less space between buildings. The 600 area, composed of about 80 buildings, was the next major cantonment area constructed. Located to the west of the central parade ground, it consisted of two large rectangular groups of barracks with service buildings on either end. The barracks were standard two-story wood buildings (700 Series). Most were constructed during 1941. Buildings 655-659 are representative structural types.

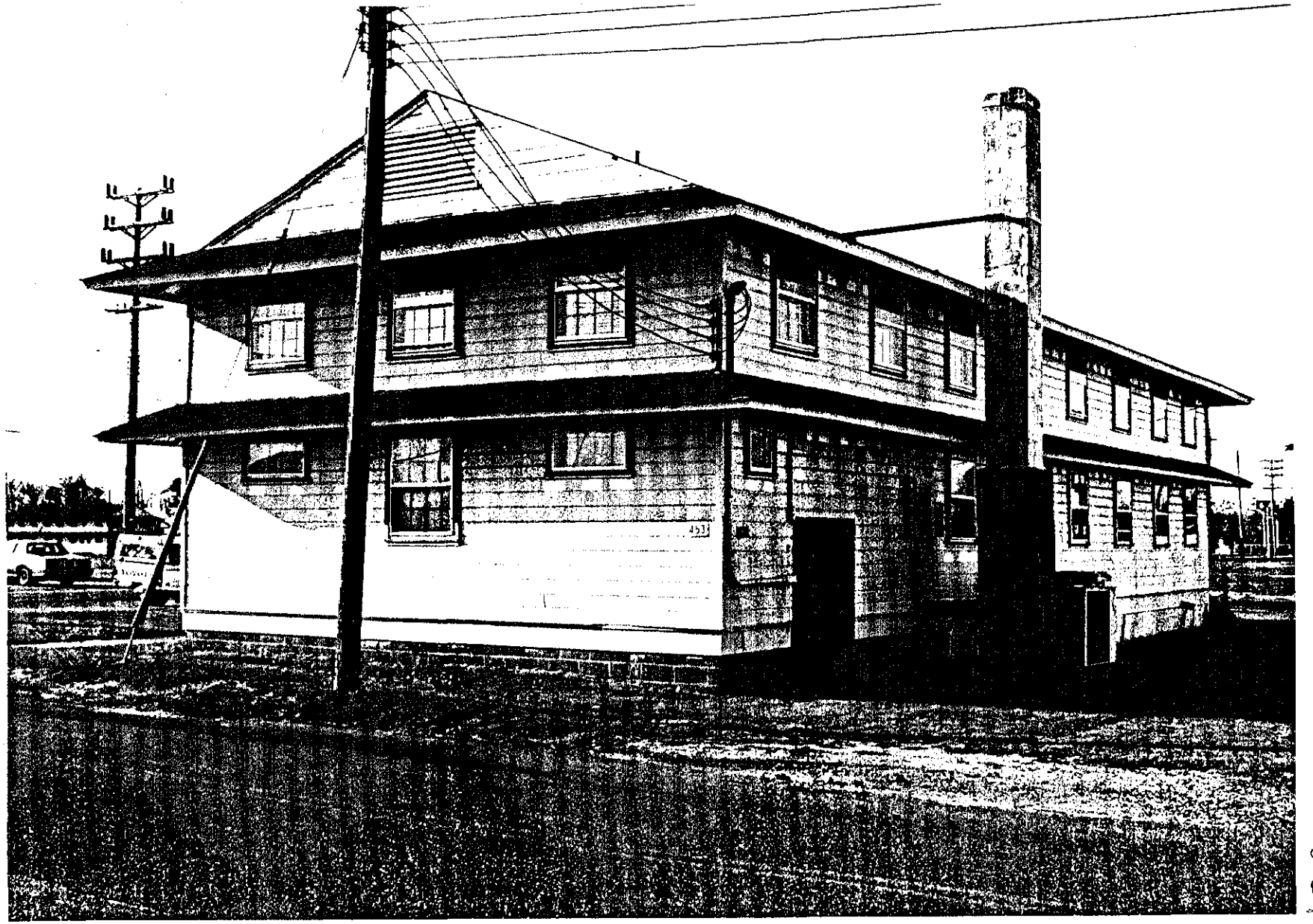

Figure 24: Photograph taken in 1982 showing Building 453, a typical 700 series barracks constructed as part of the mobilization effort for World War II. This building is now used as an administrative facility. (Source: Field Inventory Photograph)

The 700 area, constructed in 1941-42, was situated in the southwest corner of the post to the south of the New Jersey Central Railroad tracks. The area featured two rectangular groups of about 80 buildings, both with a central parade ground. Each group consisted of two rows of barracks, with service buildings located on the perimeter of the area. The site plan was based on a standard cantonment layout developed by the Quartermaster Corps, and the buildings were either standard 700 Series two-story wood barracks or 800 Series two-story concrete block barracks. Also included in the area was a fire station, a post exchange, and a chapel.

The 800 area, constructed in 1941, was located southeast of the 700 area. It consisted of about 80 buildings in rectangular quadrangles with four rows of barracks, a central parade ground, and service buildings on the perimeter of the area. The barracks were standard 700 Series two-story wood buildings and the layout of the area was based on a standard Quartermaster Corps plan.

Six large warehouses were constructed north of the 800 area, along a spur of the Central Railroad of New Jersey. Buildings 800, 801, and 804 remain standing.

An area of instruction buildings was constructed during 1940-41. This area, located to the west of Oceanport Avenue near the hospital (Building 209), consisted of about 30 one-story wood structures evenly spaced in rows and connected by enclosed wood walkways.

Many other buildings were constructed at Fort Monmouth as the installation expanded its training capacity. Along Parker's Creek, 8 two-story wood buildings were constructed as officers' housing. An area of recreation buildings, including a library (Building 550), theater (Building 555), and recreation hall (Building 552) were constructed along the western end of the central parade ground. A bowling alley (Building 695) also was constructed in this area in 1943. Warehouses were erected in the quartermaster area adjacent to the New York and Long Branch Railroad on the eastern edge of the site to provide additional storage space for supplies and equipment.

The war effort increased demands for additional housing and training buildings, and the 900 area was constructed during 1942-43. It consisted of instruction buildings, troop housing and a radar section. The housing consisted of both barracks and tent housing. The instruction buildings (Buildings 909-917) and the radar shelter facilities (Buildings 900, 902, 905, and 907) were enclosed in a secure fenced area. The radar buildings were designed to house the SCR-268, the first Army radar, searchlight controller and radio set used to detect and locate aircraft and to direct searchlight beams for anti-aircraft batteries. This prototype radar set, and the more advanced long-range detection sets, the SCR-270 and SCR-271, were the chief radar sets employed by the Army in World War II.[32] (Figure 25)

The 1000 area, a group of 50 structures, was constructed in 1942 at the southern end of the installation. Another group of buildings, the 1100 area, also was constructed during 1942 and consisted of 20 structures situated in

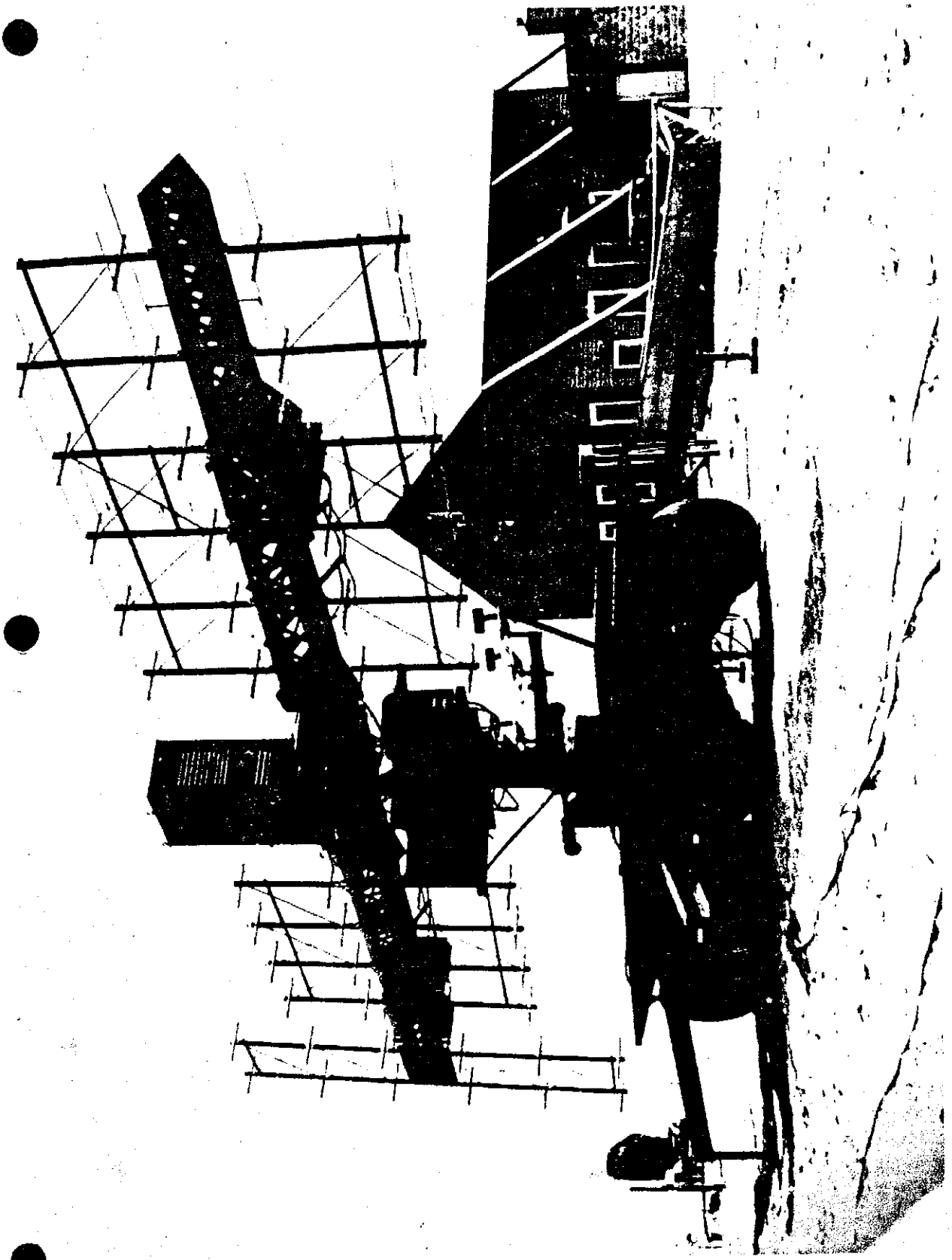

Figure 25: Photograph taken in 1941 showing SCR-268 Radar Set with a typical radar antenna shelter in the background. (Source: U.S. Army Photograph, Historian's Office)

2 rows. Located between the 600 and 700 areas, these buildings were 800 Series two-story concrete block structures that were used as instruction buildings.[33] (Figure 26)

As noted above wartime activities at Fort Monmouth reached their peak in 1943 and reductions began in May of that year. Enrollment in both the Enlisted Replacement Training Center and the Officers' Candidate School was reduced and the construction of additional buildings declined. On August 17, 1945, the post observed the end of the war in Japan and began to focus on the problems of re-adapting Fort Monmouth for peacetime activities. (Figures 27, 28, and 29)

FORT MONMOUTH AFTER WORLD WAR II

The Korean conflict expanded activities at Fort Monmouth again, and the number of military personnel and civilian employees nearly doubled from 9,705 in 1947 to 17,358 in 1953. Many of the World War II buildings were adapted for use during this period. The Signal School was expanded and the training programs developed during World War II were reorganized to meet new technological demands. During the Korean War, the school consisted of five departments: Officers' Department, Enlisted Department, Officers' Candidate Department, Department of Nonresident Instruction, and Training Aids Department. Between 1951 and 1953, about 4500 people were employed at the Signal Corps Laboratories at Fort Monmouth and its subinstallations. They were responsible for production-engineering of equipment developed

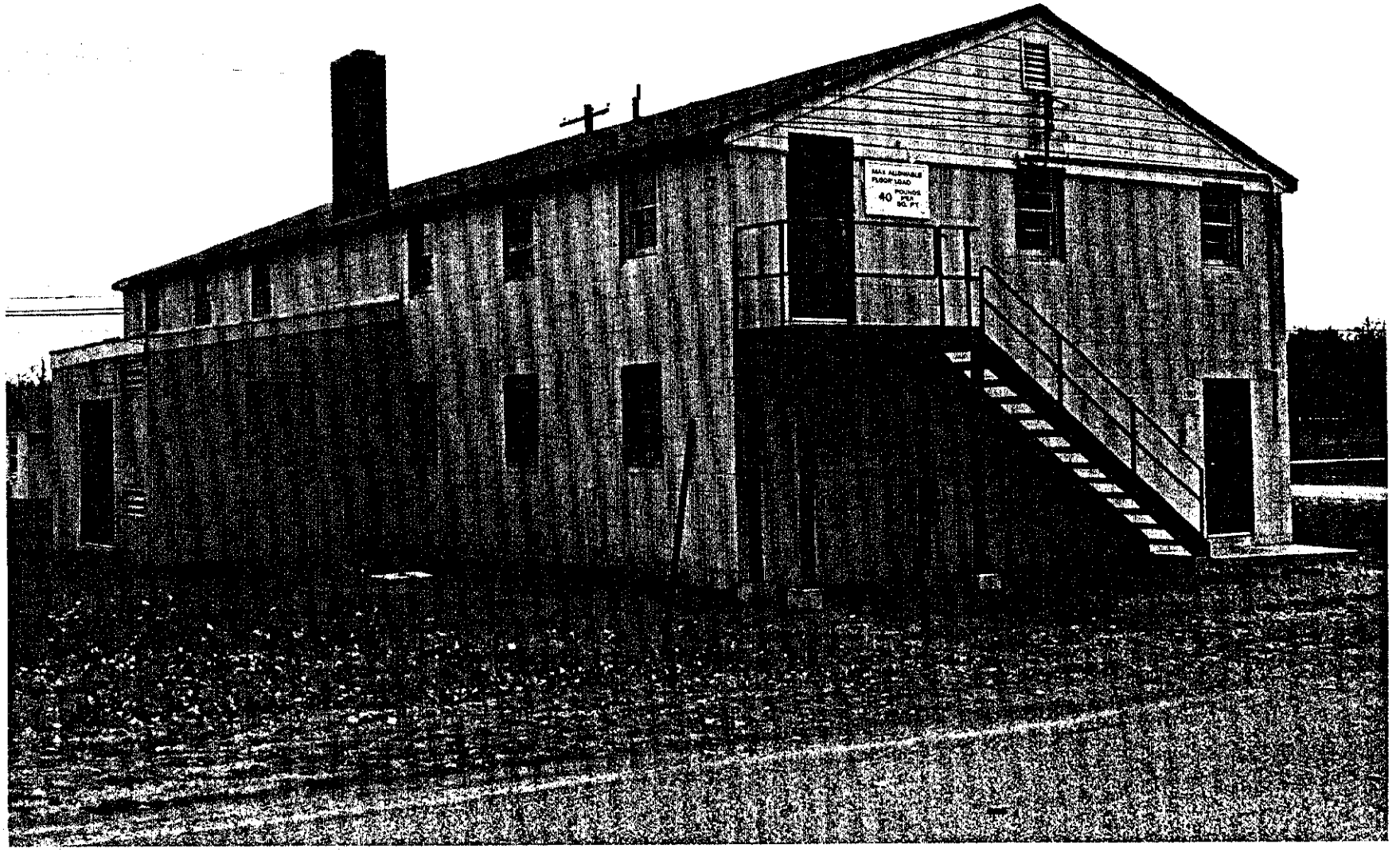

Figure 26: Photograph taken in 1982 showing Building 1107, a typical 800 series building, used as an instruction building and constructed as part of the mobilization effort for World War II. This building is currently undergoing renovation. (Source: Field Inventory Photograph)

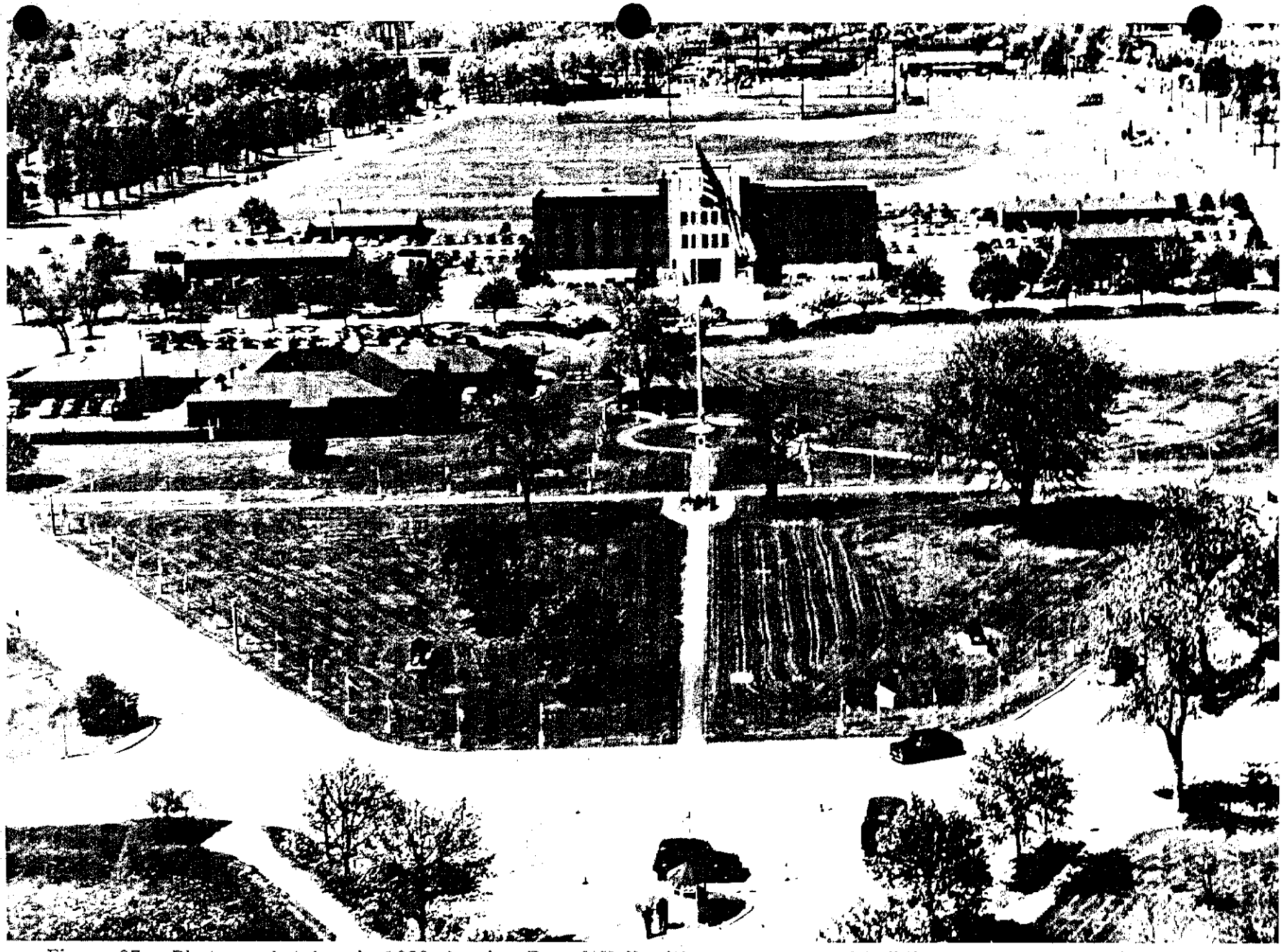

Figure 27: Photograph taken in 1953 showing Russel Hall with one-story wood buildings constructed during World War II. View looking west with Greely Field and "600" area in the background. Main gate and entrance from Oceanport Avenue in foreground. (Source: U.S. Army Photograph, CECOM Museum)

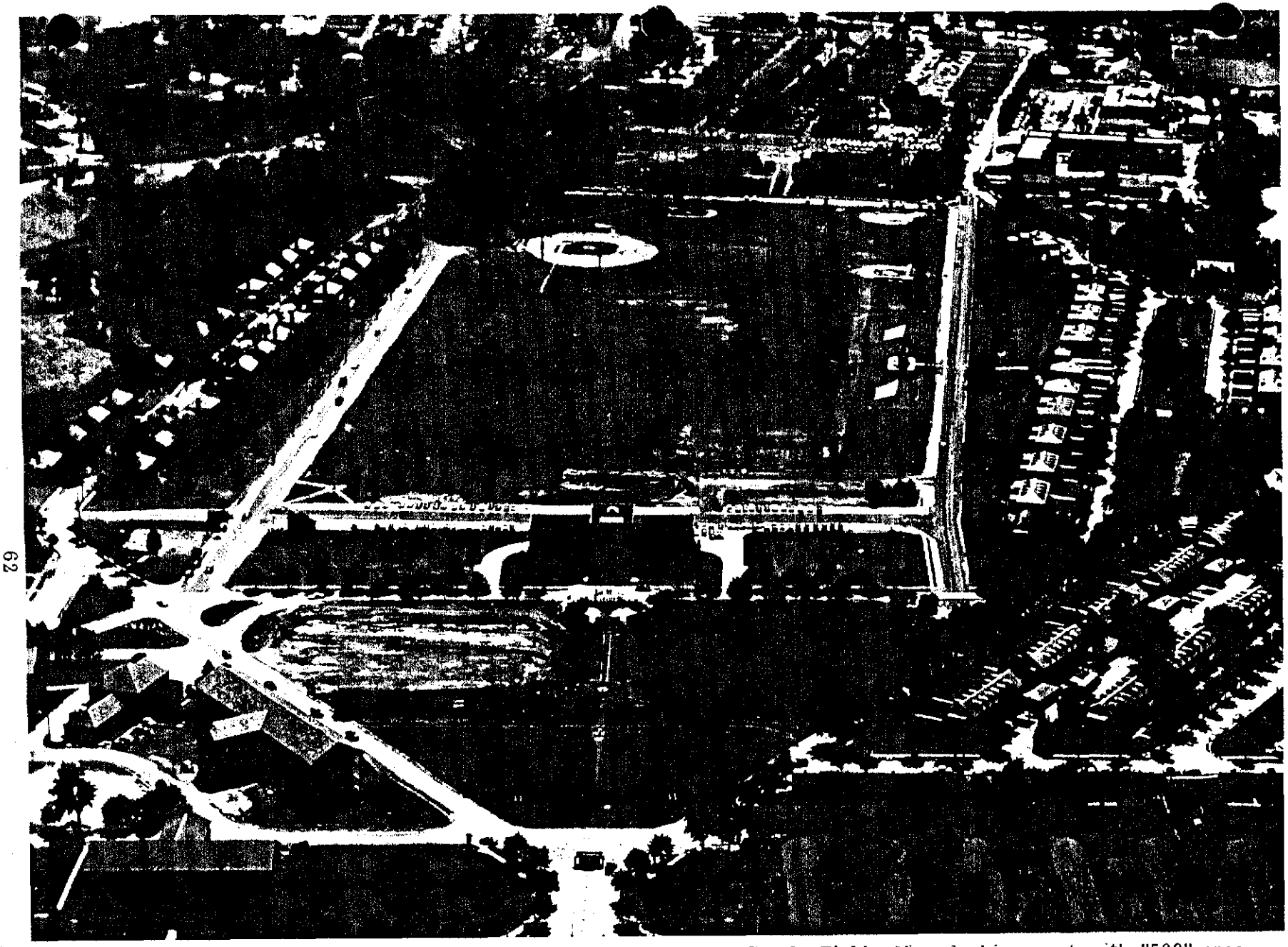

Figure 28: Photograph taken in 1956 showing Russel Hall and Greely Field. View looking west with "500" area in lower foreground along Oceanport Avenue and "600" and "700" cantonment areas in the background. (Source: U.S. Army Photograph, CECOM Museum)

Figure 29: Photograph taken c. 1950 showing World War II cantonment areas. View looking northwest with "700" area and "1100" area in the center of the photograph. "800" area is in the foreground. (Source: U.S. Army Photograph, CECOM Museum)

since World War II. Areas of research included wire communications, radar, photography, nucleonics, and thermionics.[34]

Following the Korean War, a major building program was initiated at Fort Monmouth. The goal of the program begun in 1953 was to provide permanent structures to replace inadequate World War II facilities. Plans included construction of an adminstration building, an auditorium, three buildings for the Signal School, and six permanent barracks buildings for enlisted personnel. The new construction, the 1200 area, was located on land previously undeveloped by the military on the western end of Fort Monmouth. (Figure 30)

Myer Hall (Building 1207) was constructed in 1953 as the administration building for the Enlisted Department of the Signal School. Named in honor of Brig. Gen. Albert J. Myer, Chief Signal Officer from 1860-1863 and 1866-1880, the building is a two-story steel frame and concrete block structure connected by an enclosed walkway with three buildings constructed to house the Signal School. These buildings (Buildings 1208-1210) are four-story steel frame and concrete block structures that were designed to house most of the functions of the Signal School, including classrooms, a library, a theater, several cafeterias and a post exchange. Also built in this area was an auditorium (Building 1906). Constructed in 1953, the building has both indoor theater and outdoor amphitheater space.[35]

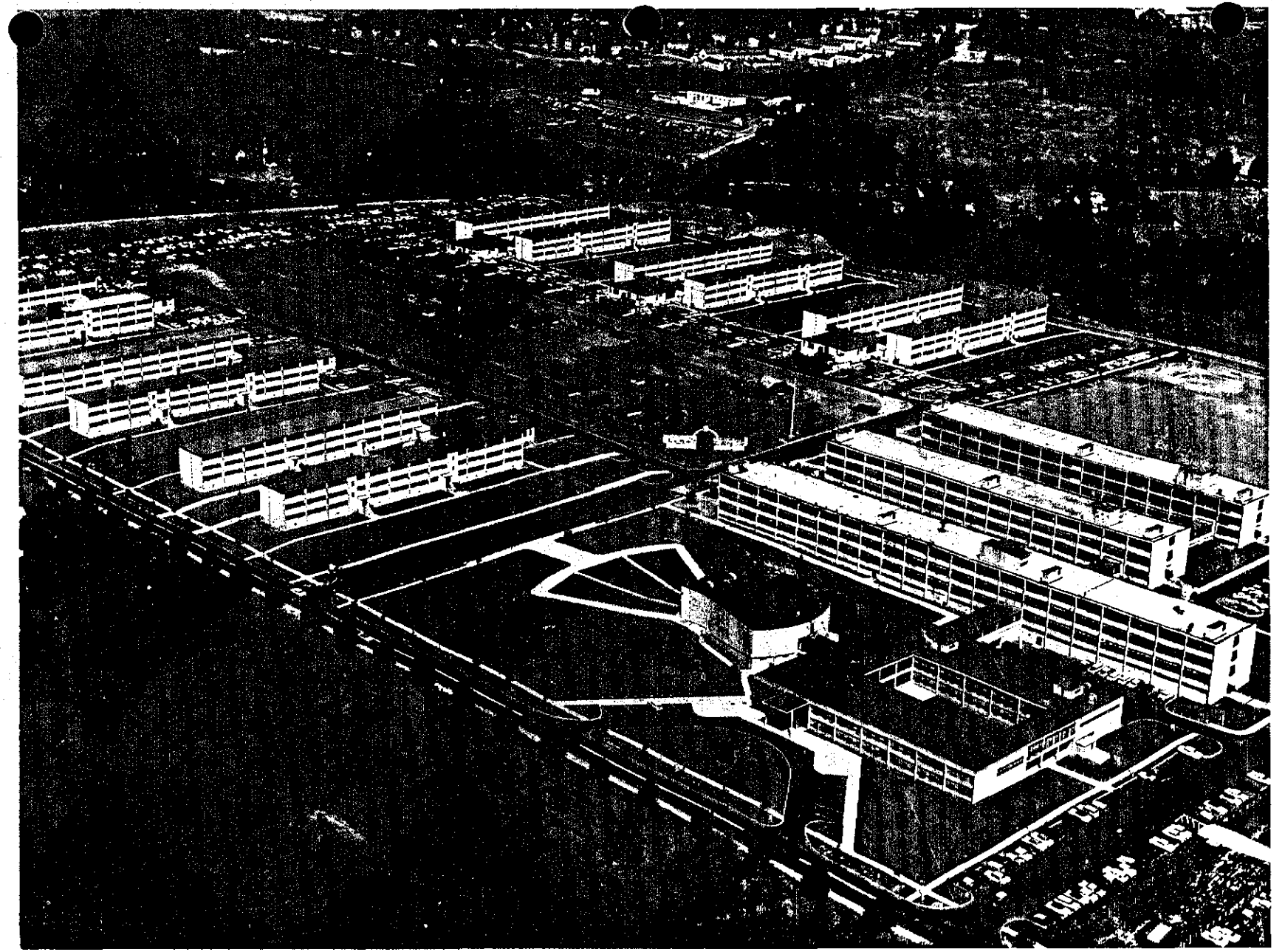

Figure 30: Photograph taken c. 1960 showing buildings constructed during the 1953 building program. View looking northwest with Myer Hall (Building 1207), the Auditorium (Building 1206), and the Signal School Buildings (Buildings 1208-1210) in the right foreground and the Signal School Barracks (1200-1205) in the background. (Source: U.S. Army Photograph, CECOM Museum)

The Signal School barracks (Buildings 1200-1205), also constructed in 1953, were planned as U-shaped buildings surrounding a central parade ground. The new parade ground was named in honor of Col. John E. Hemphill, Commanding Officer of Camp Alfred Vail from 1920-1925 and designer of the master plan for the first permanent construction program at Fort Monmouth in 1927. The barracks are three-story concrete frame and block buildings with a one-story mess hall pavillion. Each building was designed to house 500 men.[36]

A program for the demolition of World War II "theater of operations" buildings was instituted beginning in 1954 to dispose of wood structures that had fallen into disrepair. Ten structures were removed from the area of Squier Hall, and nine were removed from the area of Russel Hall. Three buildings in the 500 area along Allen Avenue were torn down to make room for construction of a three-story barracks. This barracks (Building 360), completed in 1956, was built as housing for 60 bachelor noncommissioned officers. Two major warehouse buildings (Buildings 975-976) were completed in 1954 and replaced World War II troop housing in the 900 area. About 50 World War II buildings in the 1000 area, located in the southern part of the installation, were demolished to make way for a new hospital. This hospital (Building 1075), a three-story concrete building, was completed in 1961.[37]

The remaining World War II structures located in the 500 area around Allison Hall were replaced in 1965 by two permanent barracks buildings. These three-story brick structures (Buildings 361 and 362) were designed as BOQs. Two other BOQs (Buildings 363 and 364), both similar in design, were built in this area between 1968 and 1971.

Many of the World War II buildings in the 800 area were demolished by 1970 to make space for a post exchange, a cafeteria, a post office, and several banks (Buildings 1000-1006). This new complex is centered around a large parking lot and resembles a suburban shopping area.

Until recently, several of the World War II cantonment areas remained virtually intact. A program of demolition within the past 15 years, however, has removed many of the World War II barracks. Virtually all of the buildings in the 600, 700, and 800 areas have been demolished, and only scattered examples remain. Some of the buildings in the 400 area also have been demolished, but enough remain to give a sense of the original World War II plan.

Numerous other buildings have been constructed at Fort Monmouth since World War II. Included among the more important structures are a World War II memorial (Building 115), an athletic fieldhouse (Building 114), and a communications center (Building 1150), all constructed in 1952. A permanent post chapel (Building 500) was built in 1962 and located on the western side of Greely Field opposite Russel Hall. A gasoline station, bowling alley, movie theater, and library have been constructed since 1960.[38]

CHARLES WOOD AREA

In 1941, a new site for additional training facilities and maneuvers was acquired by the Signal Corps. Located 2 miles west of the main post at Fort Monmouth,

the new military reservation embraced tracts formerly known as the Eatontown Area, the Wire School Area, the Phillip's Farm, Field Laboratory No. 2 of the Signal Corps General Development Laboratory, and the Monmouth County Country Club. The area was officially designated Camp Charles Wood in July 1942 in honor of Lt. Col. Charles W. Wood, Signal Corps, and redesignated the Charles Wood Area in 1958.[39] It is bounded on the north by Tinton Avenue, on the east by Maxwell Place, on the south by Pine Brook Road, and on the west by Pearl Harbor Road. The area is bisected by Hope Road. (Figure 3)

The Monmouth County Country Club, which comprised a large portion of the land designated for the new camp, was acquired by the Army in October 1941. In the late 1920s, Max Phillips purchased the Caleb Estate and the Winter Farm, a total of 600 acres, and established the Sun Eagles Country Club. A large clubhouse, designed by B. Hustace Simonson, was built in the English Tudor style. Two homes, also in the Tudor style, were built in the 1920s on private property west of Hope Road. In the 1930s, the club was renamed the Monmouth County Country Club; it featured an 18-hole golf course, tennis courts, and a swimming pool and polo field as well as trap shooting and trout fishing on club property. The Army's purchase of the club also included the acquisition of the clubhouse building. In May 1947, the clubhouse was designated Gibbs Hall (Building 2000) to honor Maj. Gen. George S. Gibbs, Chief Signal Officer from 1928-1931, and was converted into the Fort Monmouth Officers' Club.[40] (Figure 31)

Figure 31: Photograph taken in 1982 showing Gibbs Hall (Building 2000), the Fort Monmouth Officers Club. This building was constructed during the 1920's as the clubhouse of the Sun Eagles Country Club, later the Monmouth County Country Club. The property was purchased by the Army in 1941. (Source: Field Inventory Photograph)

Camp Charles Wood was built in 1941-42. Two troop cantonment areas were constructed in the northwest corner of the camp along Tinton Avenue. The cantonment areas were planned around two major parade grounds, Colin Kelly Field and Frawley Field, and consisted of about 60 standard 700 Series World War II barracks, about 20 school buildings, and various mess halls and administration buildings. The area also included two theaters, a bowling alley, a recreation hall, a post exchange, a dental clinic, an infirmary, a firehouse, and a chapel. All but two of these buildings--the chapel and one theater--were demolished between 1955 and 1960. The chapel (Building 2275), constructed in 1942, is a standard 700 Series Quartermaster Corps design and it remains in good condition. The heater (Building 2337) was built in 1942 and designated Perkins Hall in March 1943 in honor of Private James Perkins, a Signal Corps war hero.[41]

In the spring of 1942, a third barracks area was constructed. This cantonment area, located in the northeast corner of the camp near the clubhouse, consisted of 14 barracks and a mess hall. The area was probably constructed as officers' housing.

Construction of a Signal Corps radar area was begun in 1942, and it was centered around a major laboratory building. The laboratory (Building 2525) is a long, two-story concrete block building that provides 8640 square feet of laboratory and office space. A group of radio test buildings or antenna shelters was built southeast of the laboratory. These buildings were specifically designed to house the radar sets. Seven shelters remain (Buildings 2529-2535), but they now are used for various other functions. They are

tall, one-story wood structures with exterior wood-post buttresses. The radar area also included three small octagonal-shaped laboratory units (only the concrete foundations remain), a fire house (Building 2536), and a cafeteria (Building 2537, now an indoor pistol range).

Five large one-story concrete block warehouses (Buildings 2502-2504, 2506, and 2507) were completed in 1942 on a siding of the Central Railroad of New Jersey near the southern boundary of Camp Charles Wood. A sewage treatment facility (Building 2560) also was constructed during this period and is still in use today.

Several major development programs were completed at the Charles Wood Area in the years following World War II and the Korean War. Building projects included extensive permanent housing and a major laboratory and headquarters complex.

A new Signal Corps engineering laboratory (Building 2700) was planned for Camp Charles Wood following the Korean War to consolidate the research efforts conducted at Squier Hall Fort Monmouth and other subinstallations. The contract for the building was awarded in August 1952, the first section was completed in September 1954, and the second section was finished by late 1955. Although the building was originally planned as a hexagonal ring-shaped structure, the final section was never completed. Presently known as the Hexagon Building, it is a four-story steel frame and concrete block structure

that provides 400,000 square feet of office and laboratory space and serves as a consolidated center for communications research, top command, and overall administration.[42] (Figure 32)

The permanent housing program at Camp Charles Wood was initiated in 1949 with the construction of 11 officers' family housing units (Buildings 2023-2024 and 2029-2037). These two-family houses were constructed west of the Officers' Club along Magill Drive in the middle of the golf course. Ten additional units (Buildings 2022, 2025-2028 and 2038-2042) were constructed in 1951 on the golf course around a circular drive with access to Magill Drive. Eleven more housing units (Buildings 2231-2240 and 2260) were constructed in 1955 west of Hope Road on Hemphill Road. All of these buildings are of the same two-story brick housing design with some minor variations between buildings.[43] (Figure 33)

In 1953, 52 permanent Wherry housing units (Buildings 3001-3052) were constructed in the Pine Brook area of Camp Charles Wood to provide additional quarters. This housing project, named Eatontown Gardens, was built in three funding increments at a total cost of $6 million and was finished in December 1954. The area is composed of garden apartment units sited on either side of Pine Brook Road in semi-circular layouts with garages (Buildings 3201-3222) and parking lots accessible from circular drives.

A program of permanent housing construction financed by the Capehart Housing Act was begun in 1955 with the construction of a prototype housing unit (Building 2261). Beginning in that year, the World War II cantonment camps

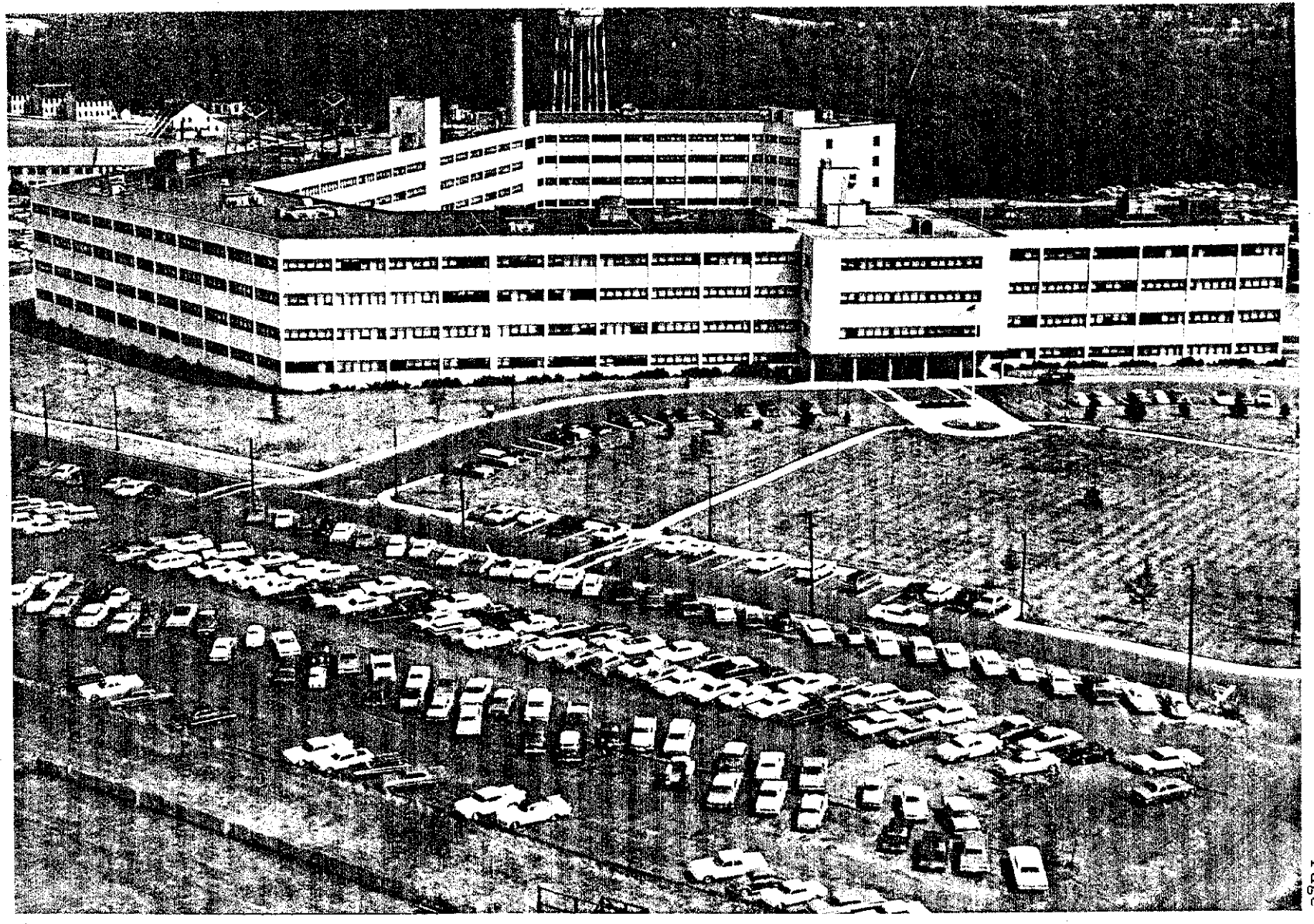

Figure 32: Photograph taken c. 1965 showing the Hexagon Building (Building 2700) completed in 1955 as the Research and Development Engineering Laboratory. View looking southeast showing main entrance. (Source: Fort Monmouth Installation Brochure, 1974)

Figure 33: Photograph taken c. 1965 showing officers housing constructed at the Charles Wood area from 1947-1951. View of Building 2260 looking north at main facade. (Source: Fort Monmouth Installation Brochure)

around Colin Kelly Field and Frawley Field were demolished to make room for the new planned housing areas, but actual construction of the Capehart housing was not begun until 1958. Between 1958 and 1959, 36 housing units (Buildings 2262-2271, 2274-2276, 2281-2285, 2287, 2289, and 2461-2478) were completed on the site of the World War II catonment areas. Each structure contains either 4 or 8 two-story apartment units, and the buildings are laid out either parallel to access roads or around a central courtyard. Some of the larger groupings are staggered to reduce their massing. (Figure 34)

The final group of Capehart housing units (Buildings 2211-2226, 2241-2243, 2245, and 2256) was completed in 1960 on the World War II cantonment site. Each building has 4 two-story apartment units, and they are widely spaced and sited parallel to access lanes. In 1970, 17 additional housing units were constructed along Tinton Avenue at the Charles Wood Area.[45]

EVANS AREA

The Evans Signal Laboratory was established in 1941 as a center for radar development in World War II. Radar, had been a high priority project of the Signal Corps since World War I when the Corps developed electronic listening devices for locating aircraft. In July 1935, Signal Corps scientists working at Navesink Light, east of Fort Monmouth on the New Jersey coast, successfully demonstrated the detection of aerial targets by radio waves. Army responsibility for further radar research and development was assigned solely to the Signal Corps in 1936, and in December of that year the first portable

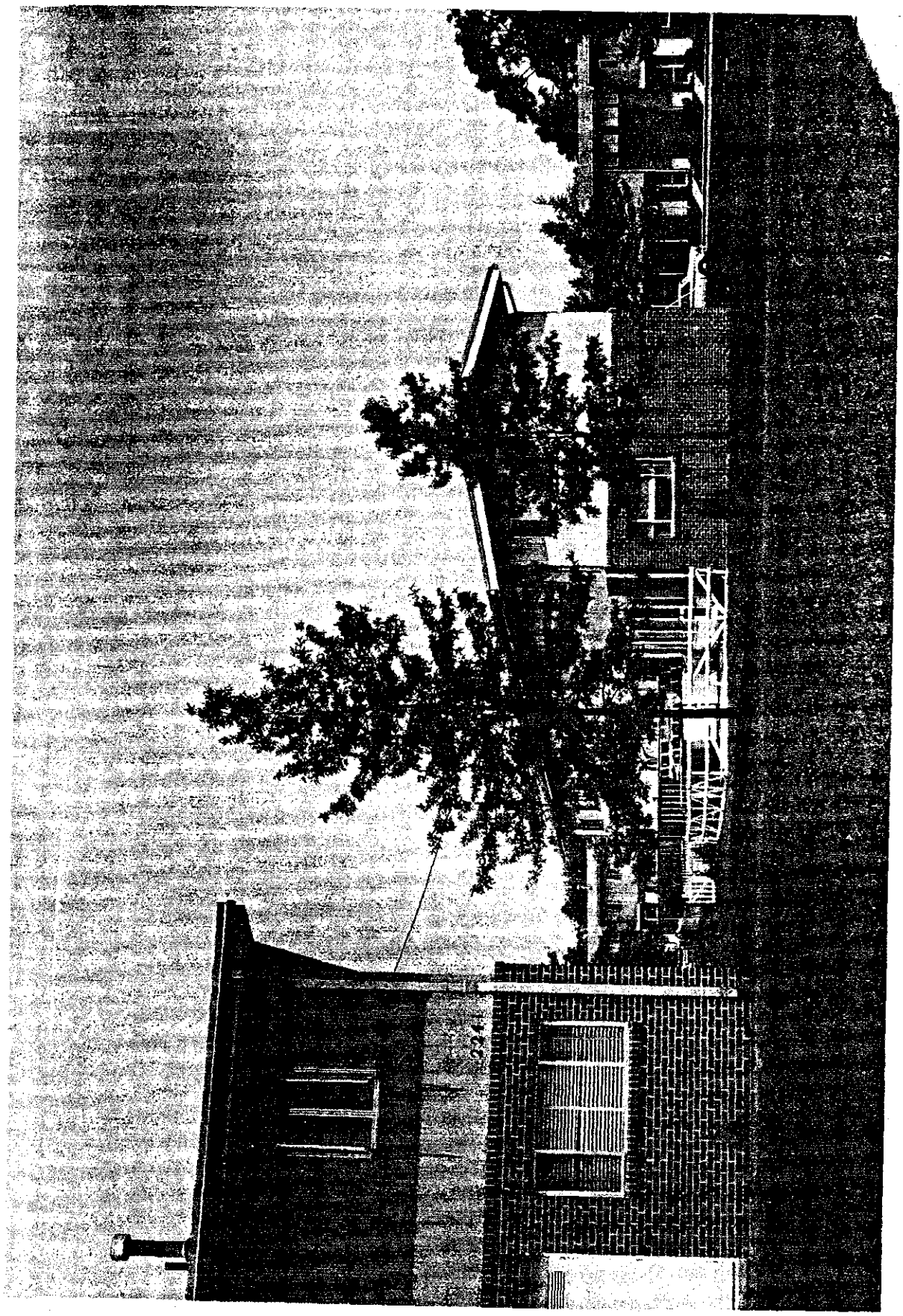

Figure 34: Photograph taken c. 1965 showing Capehart Housing Units constructed at the Charles Wood area between 1958 and 1960. View showing typical building layout. (Source: Fort Monmouth Installation Brochure, 1974)

radar set was successfully tested. The rapid growth of radar research under the National Defense Program and the need for an Army Signal Corps Laboratory devoted solely to radar, led to the establishment of the Evans Signal Laboratory.[46] (Figure 4)

The laboratory is located 9 miles south of the main post at Fort Monmouth on 253 acres of land with frontage on the Shark River. The installation is bounded by the river on the east; by Brighton Avenue, Washington Avenue, and New Jersey Route 18 on the north; by Belmar Avenue on the west; and by Ridge Road on the south. Most of the laboratory and administration buildings are concentrated in the center of the site with access from Marconi Road and Monmouth Boulevard. A large test area comprises the southwest corner of the installation.[47] (Figure 35)

The laboratory site is located on land once owned and developed by the Marconi Wireless Telegraph Company of America. At the turn of the century, the Marconi Company, with headquarters in London, England, purchased the 93-acre Woolley Farm in Belmar, New Jersey, and developed the rural site as the location for the company's receiver equipment for commercial trans-atlantic radio operation. Six permanent radio antennas were constructed on the site to relay signals to the transmitting station at New Brunswick, New Jersey, some 40 miles away. None of these towers remain standing today; however the Marconi Company also constructed some permanent buildings that do remain standing. The Marconi Hotel was dedicated in 1914; it was designated as a 45-room hotel for unmarried employees and was complete

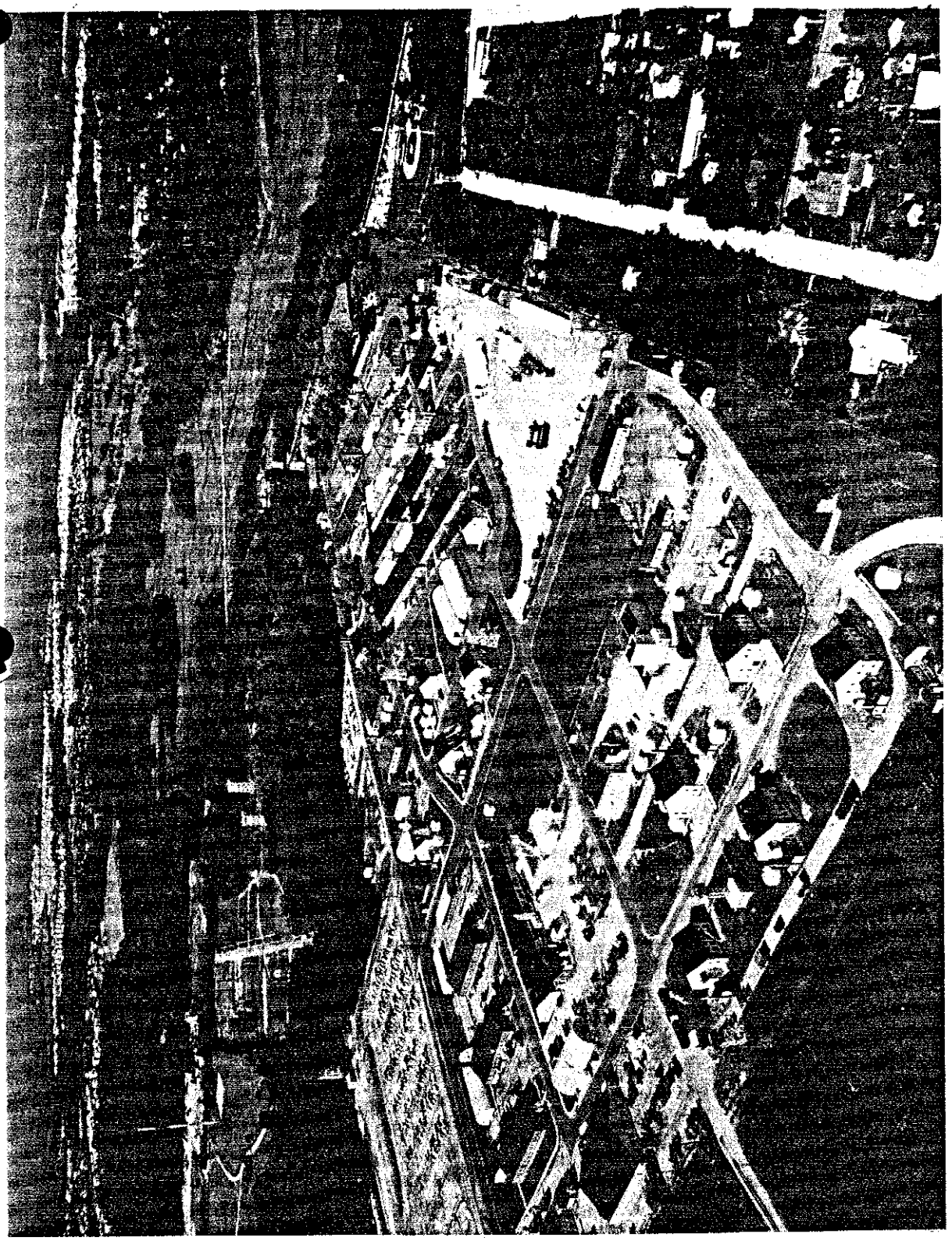

Figure 35: Photograph taken c. 1965 showing the Evans Area. Most of the buildings shown were constructed during World War II. Buildings in the center and foreground are laboratories and the radar antenna shelters. (Source: Fort Monmouth Installation Brochure, 1974)

with a large dining room and lounge. The three-story brick building, located on Marconi Road, is used today as the main administration building (Building 1) of the Evans Signal Laboratory. Two one-story brick cottages located directly across the street from the hotel also were constructed by the Marconi Company. These buildings originally provided housing for the company engineers and now serve as military officers' housing (Buildings 2 and 3). (Figure 36)

On January 30, 1914, David Sarnoff and Edward F. Armstrong (later the inventor of FM radio) conducted the Belmar experiment which successfully demonstrated the practicality of Armstrong's regenerative circuit for trans-continental radio transmission. During World War I, the U.S. Navy took control of American-Marconi, and with the government's urging at the end of the war, General Electric, along with Westinghouse and AT&T, purchased the British company's interests. In December 1919, this corporation became the Radio Corporation of America (RCA) with David Sarnoff as its president.[48]

The Belmar, New Jersey, site was abandoned by RCA, but a Protestant evangelist from Philadelphia, Reverand Percy Crawford, purchased the tract in 1937 and founded King's College. This interdenominational, coeducational, liberal arts school began classes in 1938 and by 1941 had an enrollment of 100 students.

In November 1941, the Signal Corps purchased King's College, including the six American-Marconi buildings. The plan of the Signal Corps was to close Fort Hancock, a temporary radar laboratory, and establish a permanent installation at Belmar. Initially, the operation at Belmar was called the Signal

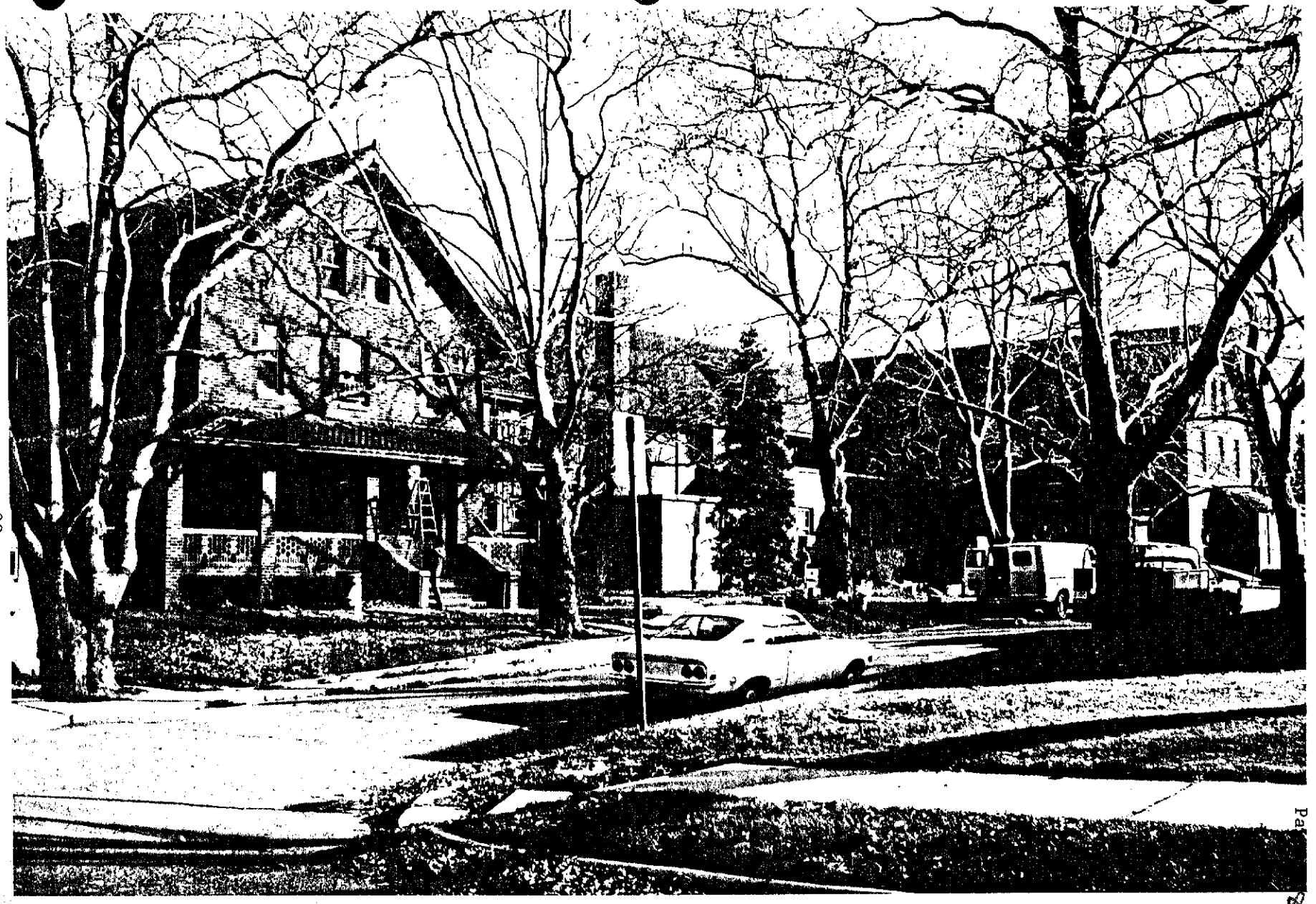

Figure 36: Photograph taken in 1982 showing the Marconi Hotel (Building 1) constructed in 1914 by the Marconi Company as a residence for unmarried employees and now the main administration building of the Evans Area. (Source: Field Inventory Photograph)

Corps Radar Laboratory; however, the term "radar" (for "radio detection and range") was classified and the site was redesignated the Camp Evans Signal Laboratory in March 1942 in honor of Col. Paul Wesley Evans (1889-1936), a World War I Signal Corps Officer. In April 1945, the name was shortened to Evans Signal Laboratory.[49]

The Signal Corps constructed a number of permanent brick buildings at the Evans Signal Laboratory between 1941 and 1942. The first brick buildings completed by the Signal Corps were four long, rectangular, one-story buildings connected by enclosed wooded walkways to comprise a large laboratory complex. Two brick boiler houses with oil-fired boilers also were constructed. All of these laboratories (Buildings 10, 11, 36, and 37) were completed in 1942.

Other permanent brick buildings constructed during 1941 and 1942 were a group of three research and development laboratories (Buildings 40-42) with an office (Building 63) and a boiler house (Building 64); two smaller laboratories (Buildings 6 and 7), each with a separate boiler house; another laboratory and boiler house (Buildings 400 and 35), and a shop facility (Building 13). All of these structures are one-story brick buildings built to provide a permanent laboratory and research center for the Signal Corps radar program. The buildings still stand, and most are still used as laboratories.

The Signal Corps also constructed a large number of wood buildings at the Evans Signal Laboratory during World War II. The most significant wood buildings constructed during this period were two groups of radio antenna shelters (Buildings 15, 17, 19, 21, 23, 25, 45, 47, 49, 51, 53, and 55). Built

in 1942 and designed to house radar units, these buildings were tall, one-story structures with exterior wood post buttresses, and although most of these structures have been altered to accomodate new functions, several remain virtually intact. The first Army radar, searchlight controller, radio set SCR-268 is the ancestor of all Army and U.S. Air Force radar.[50] (Figure 37)

Other wood-frame buildings were constructed between 1941 and 1945 as service structures. A wood frame addition to the Marconi Hotel (Buildings 32 and 33) and a telephone exchange building (Building 59) were constructed to provide additional administrative facilities. Several large warehouse buildings (Buildings 29, 34, 43, and 44) were constructed on the site as well was a fire station (Building 31), cafeteria (Building 27), and reservoir (Building 58). In addition, many small laboratory and storage buildings were constructed during the World War II period to accommodate the increased demands of war.[51]

Research in radar technology continued at the Evans Signal Laboratory at the end of World War II. A milestone in scientific history was witnessed at the Belmar site on January 10, 1946. Signal Corps scientists, under the direction of Lt. Col. John J. DeWitt, using a specially designed radar set (called the Diana Tower) succeeded in reflecting electronic pulses off the moon. A beam of high-frequency energy, traveling at the speed of light (186,000 miles per second), was directed at the moon and 2.5 seconds later was recorded on the radar screen. Continuous recordings were made at regular 2.5-second intervals.[52]

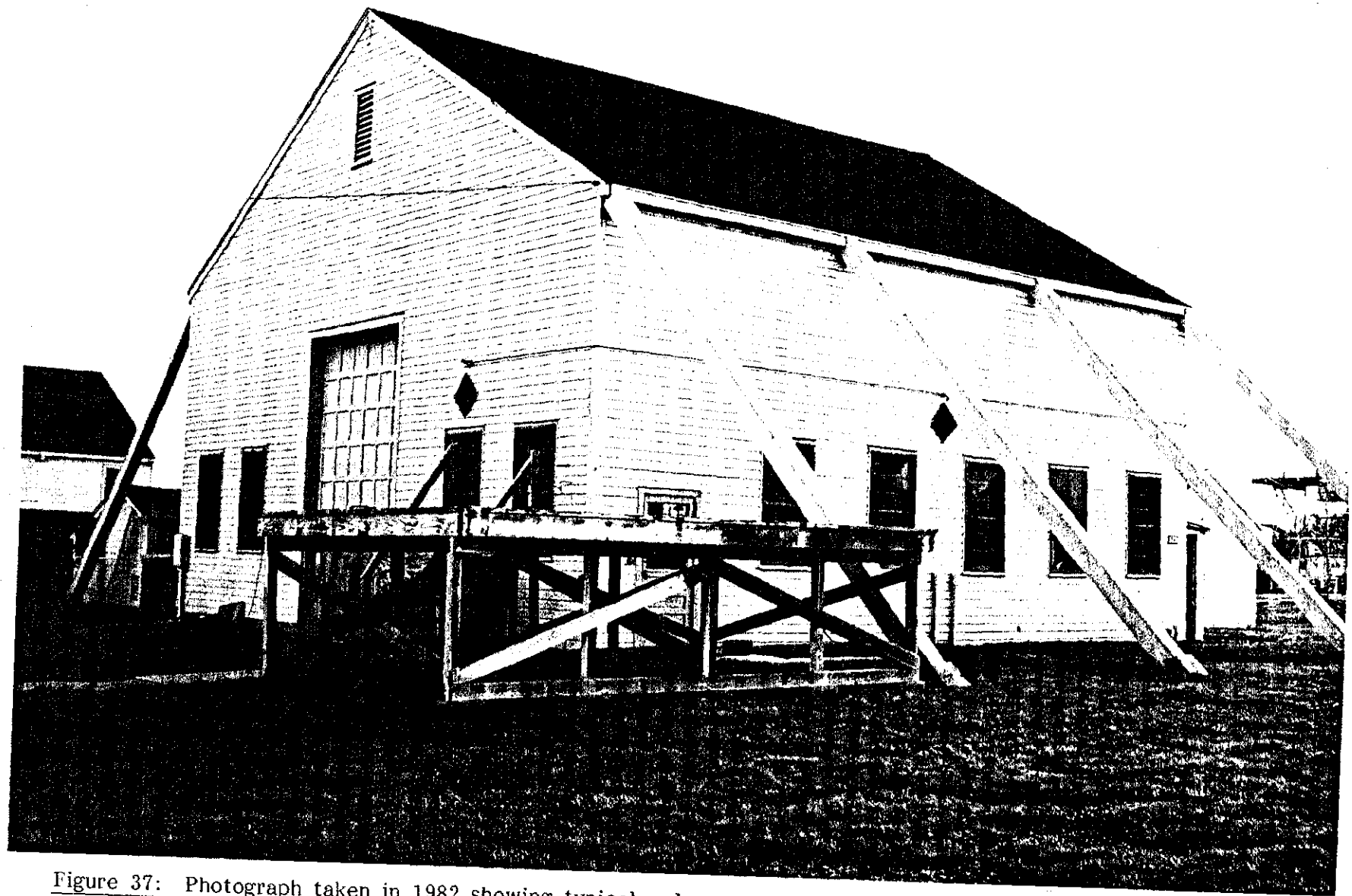

Figure 37: Photograph taken in 1982 showing typical radar antenna shelter. View showing the northwest corner of Building 23 at the Evans Area. (Source: Field Inventory Photograph)

Similar radar tests were conducted at the Evans Signal Laboratory in the following years. In 1948, galactic radiation from the Milky Way was recorded, and in November of that year, signal recordings in the direction of Orion, 595 light years away, were rebroadcast over a commercial radio station. Research on the long-range propagation program using the Diana moon radar continued. New transmitting equipment, including parabolic antenna, were developed. A new dish-shaped antenna, designed to replace the older bed-spring antenna, added versatility to the system and allowed radar reflections from the moon to be gathered at any angle of elevation above the horizon. This new radar system also collected data on radiation from radio sources (radio stars) in outer space.[53]

Very few buildings have been constructed at the Evans Signal Laboratory since World War II. Only several warehouse and storage buildings and small test structures have been added.

NOTES

1. The three other Signal Corps Camps constructed during 1917 were: Fort Leavenworth, Kansas; Leon Springs, Texas; and Presidio, California. Fort Monmouth Tradition Committee, Fort Monmouth History and Place Names, 1917-1958, p. 1; Dulaney Terrett, The Signal Corps: The Emergency, pp. 16-21.

2. Franklin Ellis, History of Monmouth County, New Jersey, p. 892; "At Monmouth Park," Harpers Weekly, Vol. 27, No. 1393, September 1883.

3. U.S. Army, Office of Chief Signal Officer, Signal Corps Bulletin No. 96, "History of Fort Monmouth," pp. 34-35; see also, Signal Corps Bulletin No. 49, "Lining Up for the Start," pp. 39-40.

4. Signal Corps Bulletin No. 35, "History of Fort Monmouth," pp. 9. 32-33.

5. Fort Monmouth History and Place Names, 1917-1958, pp. 2-6.

6. Ibid., p. 4; Signal Corps Bulletin No. 35, pp. 8-11.

7. Signal Corps Bulletin No. 35, pp. 8-11; Alfred Vail (1807-1859) was a New Jersey inventor known for his mechanical and financial contribution to the first experiments in telegraphy with Samuel F.B. Morse, Dumas Malone, ed. Dictionary of American Biography, Vol. X, pp. 136-137.

8. Topographical Map, Camp Alfred Vail, Little Silver, c. 1917.

9. Signal Corps Bulletin No. 35, pp. 10-11; Fort Monmouth Tradition Committee, Fort Monmouth History and Place Names, 1917-1958, pp. 6-13; see also, Benedict Crowell, American Munitions, 1917-1918, pp. 567-583.

10. Map, Camp Alfred Vail, Little Silver, c. 1917.

11. Squier (1865-1934) a graduate of West Point (1886) with a Doctorate of Electrical Engineering from Johns Hopkins (1893) carried on a series of electrical and radio experiments. Squier was a colleague of Armstrong, deForest, and Edison. Malone, ed., D.A.B., Vol. IX, pp. 488-489. David Marshall, "The Signal Corps in World War I," pp. 142-152 and George R. Thompson, "Radio Comes of Age in World War I, pp. 157-166 in Max L. Marshall, The Story of the U.S. Army Signal Corps, U.S. Army. The Signal School. Historical Sketch of the Signal Corps, 1860-1928, pp. 60-68. See also, Andrew J. White, Military Signal Corps Manual, 1918.

12. U.S. Army, Report of the Chief Signal Officer, 1919; Signal Corps Bulletin No. 35, pp. 10-12; Fort Monmouth History and Place Names, 1917-1958, p. 8; See also, U.S. Army War College, Historical Section, The Signal Corps and Air Service: A History of Their Expansion in the U.S., 1917-1918.

13. Map, c. 1917. Signal Corps Bulletin No. 35, pp. 14-15; Fort Monmouth History and Place Names, 1917-1958, pp. 9-12; Crowell, pp. 581-582; see also, U.S. Army, Office of Chief Signal Officer, The Homing Pigeon; Care and Training for Military Purposes, 1920.

14. Signal Corps Bulletin No. 35, pp. 13-14; Historical Sketch of the Signal Corps, 1860-1928, pp. 61-64.

15. Fort Monmouth History and Place Names, 1917-1958, pp. 13-15; Signal Corps Bulletin No. 41, "Construction at Fort Monmouth, New Jersey," p. 33.

16. Post Map of Fort Monmouth, N.J., Field Drawing No. 37-A, 1935, Revised 1940. Signal Corps Bulletin No. 94, "Permanent Construction at Fort Monmouth, N.J.," pp. 56-69; E. P. Antonovich, "Home of the Signal Corps," Quartermaster Review, November - December 1936, pp. 11-15.

17. Signal Corps Bulletin No. 94, pp. 57, 63.

18. Ibid., pp. 58, 61.

19. Ibid., p. 58.

20. Ibid., pp. 58, 60.

21. Ibid., pp 58, 65-67.

22. Ibid., pp. 58, 60.

23. Ibid., pp. 59-60.

24. Ibid., pp. 60-61.

25. Ibid., pp. 62-63.

26. Ibid., pp. 63-64.

27. Ibid., pp. 64-65.

28. Ibid., pp. 67-69; Antonovich, pp. 11-12.

29. Map, 1935-1940.

30. Eastern Signal Corps Schools, Historical Sketch of the Signal Corps (1860-1941), "Period of Expansion and Emergency," pp. 118-127; W.O. Reader, "Training at Fort Monmouth, World War II," Signals, May- June, 1947; George R. Thompson, "The Signal Corps in World War II" in Marshall, The Story of the U.S. Army Signal Corps; William R. Blair "The Signal Corps Laboratories," Signal Corps Bulletin No. 72, May-June 1933.

31. Fort Monmouth History and Place Names, 1917-1958, pp. 27-44; Helen C. Phillips U.S. Army Signal School, 1919-1967.

32. Arthur L. Vieweger, "Radar in the Signal Corps," Institute for Radio Electronics, Transactions on Military Electronics (1960), pp. 555-561.

33. Fort Monmouth History and Place Names, 1917-1958, pp. 27-44.

34. Ibid, pp. 29-30, MAP, Fort Monmouth, 1956.

35. Ibid.

36. Ibid.

37. Ibid.

38. Map, Fort Monmouth, 1972.

39. Fort Monmouth History and Place Names 1917-1958, pp. 34, 58-62.

40. William B. Strong, Jr., "Gibbs Hall" (CECOM Historians Office, 1981).

41. Maps, Charles Wood Area, 1944-1954, 1956-1960, 1960-1978.

42. Fort Monmouth History and Place Names 1917-1958, pp. 28, 34, 62.

43. Maps, Charles Wood Area 1944-1954, 1956-1960, 1960-1978.

44. Fort Monmouth History and Place Names 1917-1958, pp. 33-34.

45. Maps, Charles Wood Area, 1956-1960, 1960-1978.

46. Vieweger, pp. 555-561.

47. Map, Evans Area, 1978.

48. Harold A. Zahl, "In Case You Had Forgotten," Signal (October 1970); see also Douglas Coe, Marconi--Pioneer of Radar (New York, nd).

49. Zahl, "In Case You Had Forgotten."

50. Vieweger, p. 555.

51. Map, Evans Area, 1978.

52. Zahl, "In Case You Had Forgotten."

53. Vieweger, pp. 555-561.

Chapter 3

PRESERVATION RECOMMENDATIONS

BACKGROUND

Army Regulation 420-40 requires that an historic preservation plan be developed as an integral part of each installation's planning and long range maintenance and development scheduling.[1] The purpose of such a program is to:

- Preserve historic properties to reflect the Army's role in history and its continuing concern for the protection of the nation's heritage.
- Implement historic preservation projects as an integral part of the installation's maintenance and construction programs.
- Find adaptive uses for historic properties in order to maintain them as actively used facilities on the installation.
- Eliminate damage or destruction due to improper maintenance, repair, or use that may alter or destroy the significant elements of any property.
- Enhance the most historically significant areas of the installation through appropriate landscaping and conservation.

To meet these overall preservation objectives, the general preservation recommendations set forth below have been developed:

Category I Historic Properties

All Category I historic properties not currently listed on or nominated to the National Register of Historic Places are assumed to be eligible for nomination regardless of age. The following general preservation recommendations apply to these properties:

a) Each Category I historic property should be treated as if it were on the National Register, whether listed or not. Properties not currently listed should be nominated. Category 1 historic properties should not be altered or demolished. All work on such properties shall be performed in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation (ACHP) as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800).

b) An individual preservation plan should be developed and put into effect for each Category 1 historic property. This plan should delineate the appropriate restoration or preservation program to be carried out for the property. It should include a maintenance and repair schedule and estimated initial and annual costs. The preservation plan should be approved by the State Historic Preservation Officer and the Advisory Council in accordance with the above referenced ACHP regulation. Until the historic preservation plan is put into effect, Category I historic properties should be maintained in accordance with the recommended approaches of the Secretary of the Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings[2] and in consultation with the State Historic Preservation Officer.

c) Each Category I historic property should be documented in accordance with Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Documentation Level II, and the documentation submitted for inclusion in the HABS/HAER collections in the Library of Congress.[3] When no adequate architectural drawings exist for a Category 1 historic property, it should be documented in accordance with Documentation Level I of these standards. In cases where standard measured drawings are unable to record significant features of a property or technological process, interpretive drawings also should be prepared.

Category II Historic Properties

All Category II historic properties not currently listed on or nominated to the National Register of Historic Places are assumed to be eligible for nomination regardless of age. The following general preservation recommendations apply to these properties:

a) Each Category II historic property should be treated as if it were on the National Register, whether listed or not. Properties not currently listed should be nominated. Category II historic properties should not be altered or demolished. All work on such properties shall be performed in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation (ACHP) as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800).

b) An individual preservation plan should be developed and put into effect for each Category II historic property. This plan should delineate the appropriate preservation or rehabilitation program to be carried out for the property or for those parts of the property which contribute to its historical, architectural, or technological importance. It should include a maintenance and repair schedule and estimated initial and annual costs. The preservation plan should be approved by the State Historic Preservation Officer and the Advisory Council in accordance with the above referenced ACHP regulations. Until the historic preservation plan is put into effect, Category II historic properties should be maintained in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings[4] and in consultation with the State Historic Preservation Officer.

c) Each Category II historic property should be documented in accordance with Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Documentation Level II, and the documentation submitted for inclusion in the HABS/HAER collections in the Library of Congress.[5]

Category III Historic Properties

The following preservation recommendations apply to Category III historic properties:

a) Category III historic properties listed on or eligible for nomination to the National Register as part of a district or thematic group should be treated in accordance with Sections 106 and 110(f) of the National Historic Preservation Act as amended in 1980, and the regulations of the Advisory Council for Historic Preservation as outlined in the "Protection of Historic and Cultural Properties" (36 CFR 800). Such properties should not be demolished and their facades, or those parts of the property that contribute to the historical landscape, should be protected from major modifications. Preservation plans should be developed for groupings of Category III historic properties within a district or thematic group. The scope of these plans should be limited to those parts of each property that contribute to the district or group's importance. Until such plans are put into effect, these properties should be maintained in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings[6] and in consultation with the State Historic Preservation Officer.

b) Category III historic properties not listed on or eligible for nomination to the National Register as part of a district or thematic group should receive routine maintenance. Such properties should not be demolished, and their facades, or those parts of the property that contribute to the historical landscape, should be protected from modification. If the properties are unoccupied, they should, as a minimum, be maintained in stable condition and prevented from deteriorating.

HABS/HAER Documentation Level IV has been completed for all Category III historic properties, and no additional documentation is required as long as they are not endangered. Category III historic properties that are endangered for operational or other reasons should be documented in accordance with HABS/HAER Documentation Level III, and submitted for inclusion in the HABS/HAER collections in the Library of Congress.[7] Similar structures need only be documented once.

CATEGORY I HISTORIC PROPERTIES

There are no Category I historic properties at Fort Monmouth or its sub-installations Charles Wood Area and Evans Area.

CATEGORY II HISTORIC PROPERTIES

There are no Category II historic properties at Fort Monmouth or its sub-installations Charles Wood Area and Evans Area.

CATEGORY III HISTORIC PROPERTIES

Fort Monmouth Historic District

- Background and significance. During the course of the historic inventory of Fort Monmouth, a distinct historic district was identified and documented for nomination to the National Register. The district is comprised of most of the buildings constructed during a ten-year program (1927-1937) of permanent construction at Fort Monmouth. To a great

extent the construction of this period has determined the physical development of the post up to present day. The district consists of 71 buildings and an associated 33 garages. Of these buildings, four are less than 50 years old. These are included because they are integral to the district. Two of the four buildings—the laboratory and the headquarters building—are important symbolically and functionally.

The Fort Monmouth historic district achieves a sense of architectural unity through consistently simple designs and use of red brick as a building material. The symmetrical plan, open spaces, and many trees lend a sense of quiet, durability, and orderliness without regimentation (see Chapter 2, Fort Monmouth Before World War II, and Figures 8-23, 27, 28, 29). The buildings in this district include:

- Russel Hall (Building 286)
- Baker Circle Barracks Area (Buildings 205-208 and 287)
- Fire Station and Guard House (Building 275)
- Post Theater (now Kaplan Hall, Building 275)
- Noncommissioned Officers' Quarters (Buildings 234-253)
- Hospital (now Allison Hall, Building 209)
- Officers' Housing (Buildings 211-228)
- Commanding Officer's Quarters (Building 230)
- Four-Family Housing (Buildings 261-269)
- Bachelor Officers' Quarters and Officers' Club (Buildings 270, 271, and 360)
- Squier Laboratory (now Squire Hall, Building 283)
- Medical Building and Chapel

The Fort Monmouth historic district is significant because of its historical associations with the U.S. Army Signal Corps achievements and because, when built, it was one of a small number of bases included in the Army's first peacetime program of permanent construction. It represents in its architecture and plan an environment created over a ten-year period which implicitly conveys the values of the Army at that time.

Identification of the district was based on several factors: it is characterized by a visual cohesiveness not shared by the remainder of the post, which has been constructed mostly from World War II to the present day; it is the historical nucleus of Fort Monmouth; it was the first permanent construction at the post; and finally, it dates from the period of Signal Corps consolidation when Fort Monmouth was the symbolic focus of the Corps. In summary, it is a distinguishable district that possesses the integrity of its original design, setting, materials, and workmanship; it represents an important period in the history of Fort Monmouth and embodies the major characteristics of military housing design and site planning prevalent during this period.

All of the buildings within the historic district are Category III historic properties; none have major individual architectural, historical, or technological importance but each (with the exception of Building 380, which is an intrusion) contributes to the importance of the district as a whole.

Several other buildings constructed during the same period and in the same style lie outside the historic district. Because of their contemporary and stylistic association with those buildings within the district, they have also been rated Category III historic properties. These buildings are the Commissary (Building 277), Bakery (Building 276), Quartermaster Garage (Building 279), Carpenter Shop (Building 280), Blacksmith Shop (Building 281), and the Bachelor Officers' Quarters (Building 259).

- Condition and potential adverse impacts. All of the above buildings are in good condition and receive routine maintenance and repair. In general, the buildings have received few alterations. There are no current plans to alter or demolish any of these properties.

- Preservation options. Refer to the general preservation recommendations at the beginning of this chapter for Category III historic properties eligible for nomination to the National Register.

Print Shop, Building 104

- Background and significance. Building 104, now the main post printing plant, was one of the four wood-frame aircraft hangars built in 1918 at what was then Camp Alfred Vail (see Chapter 2, Camp Alfred Vail, 1917-1925, and Figure 7). Three of the hangars were used for housing airplanes and have since been demolished. The fourth structure, Building 104, was the airplane repair shop. These hangars were built to house and service the Signal Corps 122nd Aero Squadron, which used airplanes for testing airborne radio communications and aerial photographic methods. Building 104 is the only remaining World War I struc-

ture at Fort Monmouth. Other World War 1 aircraft hangars of similar construction are known to exist, but in what numbers could not be determined within the scope of this study. The building is a Category III historic property because it is locally unique to its historic period, because it is a good example of a historic building type, and because of its association with the World War 1 Signal Corps airborne communications and photographic experiments.

- Condition and potential adverse impacts. The building is in good condition and its exterior is largely intact, although its interior has been modified. Current plans call for the alteration or replacement of Building 104.

- Preservation options. The general preservation recommendations for Category III historic properties not listed on the National Register advise against demolition and state that the facades of such structures should be protected from major modifications. If at all possible, an adaptive use should be sought for this building, and post-World War I modifications to the building's exterior should be removed and the exterior restored to its original condition. In any case, the exterior should not be further altered. If the property must be demolished, it should first be documented in accordance with HABS/HAER Documentation Level III, and such documentation should be submitted for inclusion in the HABS/HAER collections of the Library of Congress.

SCR-268 Radar Antenna Shelters (Buildings 903, 905 at Fort Monmouth, Buildings 2529-2534 at Charles Wood Area, and Buildings 15, 17, 19, 21, 23, 45, 47, 49, 51, 53, and 55 at Evans Area)

- Background and significance. The World War II era was the most extensive development period in the history of Fort Monmouth. Most buildings constructed during this period were based on standard U.S. Army 700 Series and 800 Series designs. Exceptions were the radar antenna shelters, which were designed to house the SCR-268 radar. A total of 21 shelters are located at Fort Monmouth and the Evans and Charles Wood areas. The radar antenna shelters are Category III historic properties because of their association with the development of the SCR-268 radar, which is the predecessor of modern radar (see Chapter 2, Fort Monmouth in World War II, Charles Wood Area, and Evans Area, and Figures 25 and 37).

- Condition and potential adverse effects. The shelters vary in their physical condition from good to dilapidated. Some shelters are now used for storage and receive routine maintenance and repair, and others are abandoned. Most shelters have been altered but several are virtually intact.

- Preservation options. Clearly there is no need to preserve all 18 of the radar antenna shelters, but at least one structure should be selected, on the basis of its condition and location, for permanent retention as an historic structure. The general preservation recommendations for Category III historic properties not eligible for nomination to the National

Register should apply to the shelter selected for retention. This structure could be marked by a plaque describing its history and World War II usage.

Gibbs Hall (Fort Monmouth Officers' Club, Building 2000)

- Background and significance. Gibbs Hall, located in the Charles Wood Area, was built c. 1926 as the Sun Eagles Country Club, and renamed the Monmouth Country Club in 1931. It was designed in the English Tudor style by B. Hustace Simonson in the 1920s. The building mass is picturesque, with both gable and hip roofs. The property was purchased by the Army in 1941 and converted to an officers' club. It is a Category III historic property because it is locally important as a work of architecture (see Charles Wood Area and Figure 31).

- Condition and potential adverse impacts. Gibbs Hall has been maintained in good physical condition, but has numerous alterations and was extensively remodeled about 1980 with interior refinishing and the addition of a large meeting room on the west side. The original building, however, still maintains its basic Tudor character. There are no current plans to alter or demolish this property.

- Preservation options. The general preservation recommendations for Category III historic properties not listed on the National Register should be followed for this building. Future work on the building should be directed toward returning the building's exterior as closely as possible to the original Tudor style.

Marconi Hotel and Houses (Buildings 1, 2, and 3 at Evans Area)

- Background and significance. The former hotel and two houses constructed in 1914 by the Marconi Wireless Telegraph Company of America are located in what is now the Evans Area. The hotel was used as lodging for unmarried employees, and the two identical houses were used by company officials. The hotel, which is listed on the New Jersey Register of Historic Places, is now the Evans Area Administration Building (Building 1) and the houses (Buildings 2 and 3) are officers' family quarters (see Evans Area and Figure 36). A National Register nomination was submitted by the Army for the Marconi Hotel in 1976, but the nomination was rejected. In 1977, the New Jersey State Historic Preservation Office suggested that the site be resubmitted with the addition of a nearby Marconi-built radio tower. This tower has since been removed and the nomination was not resubmitted. The buildings are Category III historic properties because of their association with the Marconi Company and its pioneering work in early radio communications.

- Condition and potential adverse impacts. Both the Marconi Hotel and the two houses have been maintained in good condition and their exteriors are for the most part architecturally intact. There are no current plans to alter or demolish any of the three buildings.

- Preservation options. Refer to the general preservation recommendations at the beginning of this chapter for Category III historic properties.

NOTES

1. Army Regulation 420-40, Historic Preservation (Headquarters, U.S. Army: Washington, D.C., 15 April 1984).

2. National Park Service, Secretary of the Interior's Standards for Rehabilitation and Revised Guidelines for Rehabilitating Historic Buildings, 1983 (Washington, D.C.: Preservation Assistance Division, National Park Service, 1983).

3. National Park Service, "Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines," Federal Register, Part IV, 28 September 1983, pp. 44730-44734.

4. National Park Service, Secretary of the Interior's Standards.

5. National Park Service, "Archeology and Historic Preservation."

6. National Park Service, Secretary of the Interior's Standards.

7. National Park Service, "Archeology and Historic Preservation."

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PRIMARY MATERIAL

The primary reference document for the field inventory was the "Installation Inventory of Military Real Property, dated 3/31/82" prepared by the Office of the Facilities Engineer, DARCOM, Fort Monmouth, the Charles Wood Area, and the Evans Area. Information was verified by field inspection and the real property cards in the Office of the Facilities Engineer at Fort Monmouth.

Copies of historic Fort Monmount Base Maps dated 1917, 1935-40, 1941-44, 1956, 1972; Charles Wood Area Base Maps dated 1944-1954, 1956, 1960-1978; and Evans Area Base Map, dated 1978, were acquired from the Office of the Facilities Engineer at Fort Monmouth.

Copies of historic U.S. Army photos were located at the CECOM Historians Office and the CECOM Museum. Field photos used in the report were taken by David G. Buchanan.

SECONDARY SOURCES

The Office of the Chief of Military History, Department of the Army, published the outstanding series entitled The United States Army in World War II. The subseries, The Technical Services, includes a three volume history of the Signal Corps. Dulaney Terrett's The Signal Corps: The Emergency (To December 1941) (Washington, 1956), was most useful to the present inventory because it deals with pre-World War II Signal Corps activities. References to Fort Monmouth are throughout, although it is often difficult to identify activities with remaining buildings.

A collection of articles on the history of the Signal Corps is contained in Max L. Marshall, The Story of the U.S. Army Signal Corps, (New York, 1965). Another collection of articles is Paul J. Scheips, Military Signal Communications, Volumes I & II, (New York, 1980).

The single most useful reference work was Fort Monmouth History and Place Names, 1917-1958 (Fort Monmouth, 1958). Although non-authored and non-footnoted, the work provided accurate information about the physical development of the installation and referenced individual buildings. The chronological narrative, primarily from The Signal Corps Bulletin contains a useful section, "Fort Monmouth Place Names" and "Charles Wood Area Place Names".

The Office of the Chief Signal Officer published The Signal Corps Bulletin (Since 1920). An early account, "History of Fort Monmouth," Bulletin 35 (1926), provided the basis for a subsequent history in Bulletin 96 (1937).

Less useful, for the purpose of inventory and documentation, were the Eastern Signal School Corps School's pamphlet 32, Historical Sketch of the Signal Corps, 1860-1941, (Fort Monmouth, 1942) and Helen C. Phillips, U.S. Army Signal School, 1919-1967 (Fort Monmouth, 1967).

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World War 1 research and development of communications technology for the military began with the Signal Corps at Fort Monmouth. The subject is explored in David J. Marshall, "The Signal Corps in World War I," and George R. Thompson, "Radio Comes of Age in World War I". Both articles appear in Marshall, The Story of the U.S. Army Signal Corps. A chronical of World War techology is Benedict Crowell, "Signal Corps Material," America's Munitions 1917-1918 (Washington, 1919) and Report of the Chief Signal Officer (Washington, 1919); see also J. Andrew White, Military Signal Corps Manual (Wireless, 1918). For activities of the birth of the Signal Corps' Air Corps see U.S. Army War College, The Signal Corps and Air Service: A History of Their Expansion in the U.S., 1917-1918, Monograph No. 16 (Washington, 1922). The best material on World War I pigeon program is the U.S. Army Office of the Chief Signal Officer, The Homing Pigeon: Car and Training for Military Purposes (Washington, 1920). For World War I training activities see "Camp Alfred Vail," in Telephone Review (Aug., Sep., Dec., 1917). For development at the radio laboratories see "Signal Corps Laboratories," Bulletin 72 (1933).

The permanent construction program, 1927-1937, was the most important focus of this inventory. Maps and photos were supplemented by two invaluable articles written by officers of the Construction Division of the Quartermaster Corps. Ralph H. Davey, "Permanent Construction at Fort Monmouth, N.J.," Bulletin 94 (1937) and E.P. Antonovich, "Home of the Signal Corps," Quartermaster Review (Nov. - Dec. 1936).

By World War II, Squier Lab at Fort Monmouth was the center of military communications technology, including developments in radar. See W.O. Reeder, "Training at Fort Monmouth, World War II," Signal 5 (1947) and "U.S. Army Signal Corps Issue," Radio News 31-2 (1944). The early history of radar is "Radar, Past, Present and Future," Army Ordnance (Sept. - Oct. 1945). For further investigation in the field of radar, see Northwestern University Library Selecters Bibliography on Radar (Evanston, IL, 1946). For specific activities at the Evans Area, see Harold A. Zahl, "In Case You Had Forgotten," Signal 25-4 (1970). For the role of the Signal Corps in World War II, see George R. Thompson, The Signal Corps: The Test (Washington, 1957) and The Signal Corps: The Outcome (Washington, 1966).

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